



**1999 ARIZONA
BEHAVIORAL RISK FACTOR SURVEY
ANNUAL REPORT**



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State of Arizona

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ANNUAL REPORT**

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BEHAVIORAL RISK FACTOR SURVEY (BRFS) 1999 ANNUAL REPORT

ARIZONA DEPARTMENT OF HEALTH SERVICES BUREAU OF PUBLIC HEALTH STATISTICS

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EXECUTIVE SUMMARY

This report presents findings from a statewide adult survey that measures specific behavioral risk factors and chronic diseases in Arizona for 1999. The Behavioral Risk Factors Survey (BRFS) program is a rich source of unique state level public health data which have become an integral part of overall health promotion and disease prevention/intervention planning throughout Arizona.

The results of 1999 Behavioral Risk Factor Survey show that:

14.0% of all respondents reported that they did not have health coverage.

More than 1/3 of adult Hispanic Arizonans reported that they did not have health coverage.

4.3% of all respondents reported that they were told by a doctor that they had diabetes.

One third of all respondents with an annual household income of less than \$15,000 had not had their blood pressure checked within the past two years.

14.1% of respondents, who had their blood pressure checked, reported that they had hypertension.

57.0% of women and 55.8% of men reported that their cholesterol had never been checked.

Almost 1/4 of adult Arizonans reported having high cholesterol.

29.0% of women at least age 40 with a low household income, had never had a routine mammogram.

28.0% of women ages 18 to 24 years, eligible for a pap smear had never had one.

62.5% of Arizonans, 50 years and older reported never having a sigmoidoscopy.

Three-fourths of the Hispanic adult population, age 50 years and older, reported never having used a blood stool kit test.

22.0% of respondents had a body mass index that classified them as overweight.

20.0% of respondents were current smokers.

14.0% of males and 3.0% of females reported they were binge drinkers.

9.0% of males reported they were chronic drinkers.

7.8% of males, age 55 to 64 years, and 2.3% of females, age 18 to 24 years reported having driven after having too much to drink one or more times in the past month.

More than half of the adult population in Arizona with a household income of less than \$15,000 reported that they had not had a dental visit in the past year.

70.0% of all Arizonans reported consuming less than 5 servings of fruits and vegetables each day.

62.0% of all respondents, age 18 to 64 years reported never having been tested for HIV/AIDS.

40.0% of Arizona females of child-bearing age reported that they did not know that folic acid prevented birth defects.

Highlights of the 1999 Behavioral Risk Factors Survey:

Table I: 1999 Behavioral Risk Factor Survey: Risk Factor/ Chronic Disease Prevalence, Percentage Within Demographic Groups

Reported Groups at Highest Risk						
Risk Factors (Prevalence)	Sex/ Age	Race/ Ethnicity	Marital Status	Income	Employment Status	Education Level
No Health Care Coverage (14.1%)	Male/35-44 (20.0%) Female/25-34 (29.7%)	Hispanic (34.6%)	Unmarried (14.5%)	< \$15,000 (23.2%)	Lost Job/ Changed Employer (44.9%)	Less Than High School graduate (49.4%)
Diabetes (4.3%)	Male/ 55-64 (12.9%) Female/ 45-54 (7.4%)	Hispanic (10.6%)	Married (5.4%)	\$50-\$74,999 (8.0%)	Retired/ Unable to Work (8.2%)	Less than high school graduate (7.5%)
No High Blood Pressure Screening (8.8%)	male/ 45-54 (13.9%) female/ 25-34 (14.6%)	Hispanic (15.1%)	Unmarried (8.2%)	<\$15,000 (33.8%)	Not Employed (14.0%)	Less Than High School graduate (22.6%)
Never had Cholesterol Screening (22.6%)	Male/ 18-24 (55.8%) Female/ 18-24 (57.0%)	Hispanic (35.8%)	Unmarried (27.1%)	<\$15, 000 (51.3%)	Student/ Homemaker (36.8%)	Less Than High School graduate (36.4%)
High Cholesterol Awareness (24.8%)	Male/ 65+ (41.7%) Female/ 55-64 (42.5%)	White, non- Hispanic (28.7%)	Married (26.4%)	\$50-\$74,999 (37.4%)	Retired/ Unable to Work (33.9%)	High school graduate or GED (30.7%)
Never had a Routine Mammogram (women age 40 and older) (12.0%)	Age 40-49 (17.9%)	Black, non- Hispanic (23.1%)	Unmarried (15.7%)	\$15-\$24,999 (28.9%)	Student/ Homemaker (20.8%)	Less than high school graduate (19.4%)

Reported Groups at Highest Risk (Continued)						
Risk Factors (Prevalence)	Sex/ Age	Race/ Ethnicity	Marital Status	Income	Employment Status	Education Level
No Mammography and Clinical Breast Exam (women age 40 and older) (17.9%)	Age 40-49 (21.0%)	Black, non- Hispanic (27.9%)	Unmarried (23.9%)	\$15-\$24,999 (36.2%)	Student/ Homemaker (25.6%)	Less than high school graduate (27.9%)
Never had a Pap Smear Test (9.0%)	Age 18-24 (28.4%)	Other Race (22.3%)	Unmarried (13.8%)	<\$15,000 (11.3%)	Student/ Homemaker (13.6%)	Less than high school graduate (17.7%)
No Sigmoidoscopy (people age 50 and older) (62.5%)	Male/ 50-59 (66.6%) Female/ 50-59 (76.8%)	Other Race (82.9%)	Unmarried (63.6%)	\$50-\$74,999 (76.5%)	Employed (76.0%)	High school graduate or GED (71.3%)
Never Used a Blood Stool Kit (people age 50 and older) (43.5%)	Male/ 50-59 (53.0%) Female/ 50-59 (58.8%)	Hispanic (74.6%)	Unmarried (43.9%)	<\$15,000 (51.3%)	Student/ Homemaker (73.0%)	Less than high school Graduate (82.8%)
Overweight (BMI) (21.9%)	Male/ 35-44 (29.6%) Female/ 45-54 (26.8%)	Hispanic (30.9%)	Married (26.0%)	>=\$75,000 (35.7%)	Retired/ Unable to Work (23.6%)	Less than high school Graduate (33.3%)
Current Smoker (20.0%)	Male/ 45-54 (28.6%) Female/ 45-54 (28.1%)	Other Race (25.2%)	Unmarried (22.1%)	< \$15,000 (27.6%)	Not employed (33.3%)	Some college or Tech school (23.8%)
Acute (Binge) Drinking (8.7%)	Male/ 18-24 (24.2%) Female/ 18-24 (12.9%)	Other Race (21.7%)	Unmarried (12.2%)	>=\$75,000 (19.6%)	Employed (11.8%)	Some college or tech School (10.7%)
Chronic Drinking (4.4%)	Male/ 55-64 (13.3%) Female/ 45-54 (1.0%)	White, non- Hispanic (5.1%)	Married (4.6%)	<\$15,000 (9.6%)	Employed (6.2%)	High School Graduate or GED (5.6%)
Drinking and Driving (1.8%)	Male/ 55-64 (7.8%) Female/ 18-24 (2.3%)	Other Race (4.0%)	Unmarried (2.3%)	<\$15,000 (4.5%)	Not Employed (2.7%)	Less than high school Graduate (3.2%)
No Dental Visit in Past Year (33.5%)	Male/18-24 (46.2%) Female/ 18-24 (39.8%)	Hispanic (49.9%)	Unmarried (37.8%)	<\$15,000 (56.4%)	Not Employed (69.3%)	Less than high school Graduate (58.1%)

Reported Groups at Highest Risk (Continued)						
Risk Factors (Prevalence)	Sex/ Age	Race/ Ethnicity	Marital Status	Income	Employment Status	Education Level
Low Fruit and Vegetable Consumption (69.8%)	Male/ 55-64 (77.0%) Female/ 45-54 (75.9%)	Hispanic (81.6%)	Data not available	<\$15,000 (88.1%)	Data not available	College Graduate (68.6%)
Never had HIV/AIDS Testing (62.0%)	Male/ 18-64 (65.1%) Female/ 18-64 (58.6%)	Other (87.7%)	Data not available	<\$15,000 (93.6%)	Data not available	Less than High-School (79.9%)
Folic Acid Awareness (68.4%)	Male/ 35-44 (82.9%) Female/ 18-24 (65.9%)	Black, non- Hispanic (86.4%)	Data not available	\$50-\$74,999 (86.0%)	Data not available	Less than high school graduate (79.9%)

Summary of Trends

Risk Factor	‘93	‘94	‘95	‘96	‘97	‘98	‘99
Percent of Arizona adults who:							
Do NOT have health care coverage	16.8	14.1	15.2	16.9	14.6	13.1	14.1
Have ever been told by a doctor that they have diabetes	3.2	3.5	4.8	3.5	3.1	2.8	4.3
Have not had their blood pressure checked by a doctor, nurse or health professional within the past two years	5.7	N/A	6.9	N/A	7.0	N/A	8.8
Have had their blood pressure checked and have been told that their blood pressure is high	18.2	N/A	20.4	N/A	16.3	N/A	14.1
Never had their cholesterol checked	27.3	N/A	26.8	N/A	28.6	N/A	22.6
Have ever been told by a health professional that their cholesterol is high	16.2	N/A	18.5	N/A	22.0	N/A	24.8
Reported weights which exceed BMI (Body Mass Index) limits (females with BMI 27.3 and males with a BMI 27.8)	20.2	23.1	24.5	24.8	24.8	21.6	21.9
Had smoked 100 cigarettes during their lifetime and who smoke now (regularly and/or irregularly)	20.7	23.0	22.9	23.7	21.0	21.8	20.0
Had five or more drinks on one or more occasions, in the past month	10.2	12.2	13.5	13.5	8.8	N/A	8.7
Had on the average 60 drinks or more alcoholic drinks a month	2.3	2.9	2.4	4.9	2.6	N/A	4.4
Had driven after having too much to drink one or more times in the past month	1.8	1.3	2.7	3.5	1.4	N/A	1.8
Consume less than five servings of fruits and vegetables daily	79.3	76.4	75.7	75.7	82.8	90.9	69.7
Have NOT had a dental visit in the past year	N/A	N/A	35.7	33.4	N/A	36.0	35.0
Have not been tested for HIV	66.1	55.4	51.2	53.4	67.3	65.0	N/A

Summary of Trends

Risk Factor	‘93	‘94	‘95	‘96	‘97	‘98	‘99
Percent of Arizona women who:							
Have never had a routine mammogram (40 years of age and older)	25.8	14.9	13.7	15.5	21.4	18.0	12.0
Have never had a routine mammogram and a clinical breast exam (40 years of age and older)	30.0	18.8	17.8	19.2	26.6	21.2	17.9
Never had a pap smear (women with intact cervix, 18 years of age and older)	5.6	N/A	6.2	7.7	17.1	15.1	9.0
Reported a reason other than preventing birth defects as the reason experts recommend that women take folic acid (age 18 to 44 years of age)	N/A	N/A	N/A	69.5	48.3	71.1	60.4
Percent of older Arizona adults who:							
Never had a sigmoidoscopy (50 years of age and older)	63.2	N/A	56.5	N/A	59.9	N/A	62.5
Have never used a home blood stool kit (50 years of age and older)	N/A	N/A	N/A	N/A	53.6	N/A	56.3

RISK FACTORS/CHRONIC DISEASE TERM USAGE

Respondent	Adult Arizona residents 18 years of age or older. In some cases various subset(s) of this group may be used.
No Health Care Coverage	Respondents reporting that they do not have health care coverage.
Diabetes	Respondents reporting they were told by a doctor they have diabetes.
<u>Cardiovascular Disease</u>	
No High Blood Pressure Screening	Respondents reporting that they have not had their blood pressure checked within the past two years.
Hypertension Awareness	Respondents reporting that they have had their blood pressure checked and have been told that their blood pressure is high.
Never Had Cholesterol Screening	Respondents reporting never having their cholesterol checked.
High Cholesterol Awareness	Respondents reporting that they have ever been told by a health professional that their cholesterol was high.
<u>Women's Health</u>	
<u>Breast Cancer Screening</u>	
Never Had a Routine	Female respondents 40 years of age and older reporting that they have never Mammogram had a mammogram.
No Mammography and Clinical Breast Exam	Female respondents 40 years of age and older reporting that they have never had a mammogram and breast exam.
<u>Cervical Cancer Screening</u>	
Never Had a Pap Smear	Female respondents reporting that they have never had a Pap Smear, women with intact cervix.
<u>Colorectal Cancer Screening</u>	
No Sigmoidoscopy	Respondents, age 50 and over, reporting that they have never had a sigmoidoscopy.
Never used a Blood Stool Kit	Respondents, age 50 and over, reporting never used a home blood stool kit.
Overweight	Females with a BMI (Body Mass Index) 27.3 and males with a BMI 27.8 (BMI

is weight in kilograms divided by height in meters squared (W/H^2).

Current Smoker

Respondents reporting that they had smoked 100 cigarettes during their lifetime, and who smoke now (regularly and/or irregularly).

Alcohol

Acute (Binge) Drinking

Respondents reporting that they had five or more drinks on one or more occasions, in the past month.

Chronic Drinking

Respondents reporting that they had on average 60 drinks or more alcoholic drinks a month.

Drinking and Driving

Respondents reporting they had driven after having too much to drink one or more times in the past month.

Low Fruit and Vegetable Consumption

Respondents reporting that they consumed less than five servings of fruits and vegetables daily.

**Oral Health –
No Dental Visits in Past
Year**

Respondents reporting they had not had a dental visit in the past year.

**Never had HIV/AIDS
Testing**

Respondents ages 18 to 64 years reporting that they had not been tested for HIV.

Folic Acid Awareness

Women ages 18 to 44 years reporting a reason other than preventing birth defects as the reason experts recommend that women take folic acid.

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INTRODUCTION

In 1999, the number of Arizona residents that died was 39,673. The 1999 Arizona age-adjusted deathrate* of 507.1 per 100,000 persons is higher than the 1998 ** age-adjusted death rate of 471.7 per 100,000 persons* for the United States. The table below lists the top 11 causes of death of Arizona residents in 1999. The death rate for 7 out of 11 of these causes was higher in Arizona than the U.S. The 4 causes of death for which Arizona did not exceed U.S. death rates were heart disease, malignant neoplasms, diabetes, and unintentional injury.¹

It is well known that much disease and injury morbidity and mortality are associated with high-risk behaviors. Behaviors which contribute significantly to disease and death include cigarette smoking, lack of physical activity and alcohol consumption.² Measurements of the prevalence of behavioral risk factors serves as an indicator for potential morbidity and mortality. This measurement also provides information on those most likely to engage in these behaviors.

Arizona has participated in the Behavioral Risk Factor Survey (BRFS) since 1982. Through a cooperative agreement with the Centers for Disease Control and Prevention (CDC), the Arizona Department of Health Services (ADHS) implemented BRFS as a method to collect data annually on health risk behaviors of adult residents, 18 years of age and older, excluding institutionalized persons. The purpose of the BRFS is to provide data that can be used to plan, implement and monitor health promotion and disease prevention efforts in Arizona.

* All death rates are age-adjusted to the 1940 U.S. population. ** Only available data for U.S.

1999 ARIZONA LEADING CAUSES OF DEATH

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	AGE ADJUSTED MORTALITY RATE	PERCENTAGE OF TOTAL DEATHS
1	Heart Disease	10,335	120.9	35.3%
2	Malignant Neoplasms - Cancer	8,851	113.1	22.3%
3	Chronic Obstructive Pulmonary Disease	2,499	27.8	6.3%
4	Cerebrovascular Disease	2,320	25.9	5.8%
5	Unintentional Injury	2,192	39.8	5.5%
6	Pneumonia and Influenza	1,724	19.7	3.9%
7	Diabetes mellitus	1,046	13.5	2.6%
8	Suicide	773	14.6	1.9%
9	Alzheimer's Disease	553	5.5	1.8%
10	Homicide and Legal Intervention	457	10.0	1.1%
11	Atherosclerosis	452	4.8	1.1%

References

1. Mrela, CK, Arizona health status and vital statistics, 1999. Bureau of Public Health Statistics. Arizona Department of Health Services
2. Centers for Disease Control and Prevention. CDC Surveillance Summaries, December 27, 1996. MMWR 1996; 45 (No. SS-6).

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METHODOLOGY

A. SAMPLING DESIGN

The Arizona BRFS is a random sample telephone survey. Using the Disproportionate Stratified Sampling version of random digit dialing and Computer Assisted Telephone Interviewing (CATI) system, the survey has the potential of representing 93% of all households in Arizona (i.e., those that have telephones according to U.S. West Communications data). A sample size of 1,744 interviews over a 12-month period was collected to achieve a 95% confidence interval of $\pm 3\%$ on risk factor prevalence estimates of the adult population. This means that the estimated prevalence of any risk factor from the survey represents the total population of Arizona residents very well. Prevalence estimates of individual demographic variables, containing smaller sample sizes, do not achieve the same level of accuracy as the total sample.

Interviewers, contracted to ADHS, contacted the residences during weekdays between 9:00 a.m. and 9:00 p.m. and Saturdays between 8:30 a.m. and 4:00 p.m. After a residence had been contacted, one adult (18 years of age or older) was randomly selected from all adults residing in the household to be interviewed. Interviews were collected during a two-week period each month.

B. QUESTIONNAIRE

The questionnaire, designed through cooperative agreements with the CDC, was divided into four sections. The first section contained questions on health risk behavior; the second section contained demographic information; the third section contained optional modules, and the fourth section contained state-added questions.

C. DATA ANALYSIS

The data collected by the ADHS Office of Epidemiology and Statistics was compiled and weighted by the CDC. Weighted counts were based on the U.S. Census Bureau's 1999 Arizona population to accurately reflect the population demographics. The weighting factor considered the number of adults and telephone lines in the household, cluster size, stratum size, and age/race/sex distribution of the general population. All analyses presented are based on cell size counts of at least 8 cases. The demographic information that was collected and presented in these results includes sex, age, education, household income, race, and ethnicity.

Analysis for this report were conducted by the CDC and the Office of Epidemiology and Statistics. The analysis of sections on Folic Acid Awareness and HIV/AIDS was conducted by the Office of Epidemiology and Statistics. All other sections were analyzed by the CDC.

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***1999 ANNUAL SURVEY RESULTS:
ANALYSIS OF BEHAVIORAL RISK FACTORS***

A. HEALTH CARE COVERAGE

HEALTH CARE COVERAGE - Respondents reporting that they do not have health care coverage.

According to the 1999 Arizona BRFs, 14.1% of all respondents reported that they did not currently have health care coverage (Figure A-1). The highest percentages of persons who did not have coverage earned less than

\$25,000 (Table A-1), and the greatest prevalence of respondents with no coverage was among individuals earning less than \$15,000 per year (23.2%). Lack of health care coverage was higher among females (15.3%) and was also highest among persons 25 to 34 years old (21.0%). Of persons who reported that they did not have health care coverage, both males (21.0%) and females (28.5%) reported that it was because they could not afford premiums. Additionally, 36.4% of people age 25-34 reported that they did not have health care coverage because they lost a job or changed employers, and 55.1% of people age 55-64 reported that it was because they could not afford premiums (data not shown).

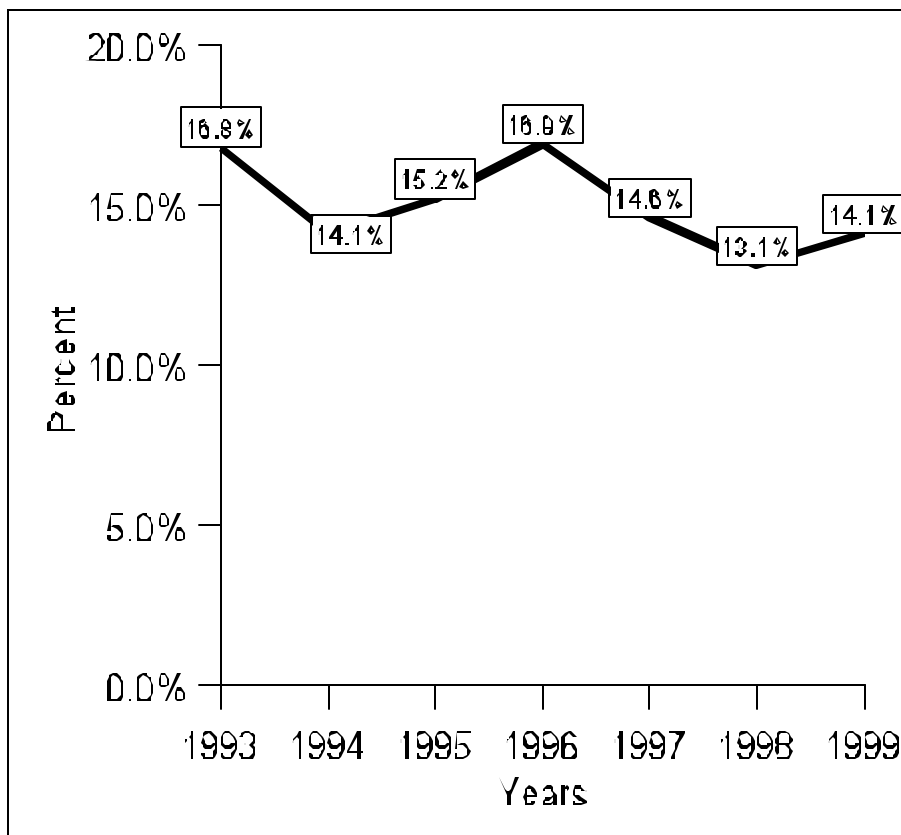


Figure A-1. 1993-1998 percent of BRFs respondents reporting they do not have health coverage

Particularly interesting is the high percentage of Arizona Hispanics without health care coverage. Results showed 33.6% of Hispanics in this survey did not have coverage. Examination of this ethnicity revealed that 29.3% of Hispanics reported that their annual income was less than \$25,000.

1999 Arizona BRFs Percentage of Arizona adults who do NOT have health care coverage (N =1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	14.1
<u>Sex</u>	
Male	12.8
Female	15.3
<u>Age</u>	
18-24	18.6
25-34	21.0
35-44	18.9
45-54	11.9
55-64	9.1
65+	3.4
<u>Education</u>	
Less Than High School	49.4
High School Graduate or GED	11.9
Some College or Tech School	9.4
College Grad	7.3
<u>Income</u>	
< \$15,000	23.2
\$15-\$24,999	18.7
\$25-\$49,999	7.0
\$50-\$74,999	1.4
\$75,000	4.9
Unknown/Refused	22.2
<u>Race/Ethnicity</u>	
White, non-Hispanic	7.4
Black	6.5
Hispanic	34.6
Other	14.5
Unknown/Refused	27.2

Table A-1. 1999 BRFs results: Percentage of Arizona adults who do NOT have health care coverage.

B. DIABETES

DIABETES - Respondents reporting that they have been told by a doctor that they have diabetes.

Diabetes is associated with long-term complications that affect almost every major part of the body. This chronic and disabling condition affects primarily older individuals. It can cause birth defects in babies born to women with

diabetes, blindness, heart disease, strokes, kidney failure, amputations, and nerve damage. As the U.S. population continues to grow older, concerns on maintaining quality of life have sparked an interest in controlling the onset and related illnesses of persons with diabetes.^{1,2}

According to the 1999 Arizona BRFSS, 4.3% of all respondents reported that they were told they have diabetes. This percentage was 1.5% higher than that reported in 1998 (Figure B-1). Table B-1 shows that more males (5.1%) reported being diabetic than females (3.5%). Age appeared to be positively associated with the risk for diabetes, as indicated by 9.9% of the 55-64 year age-group reported the highest prevalence, followed by the 45-54 year age group (9.2%). Respondents with less than a high-school education reported having the highest prevalence (7.5%), followed by those

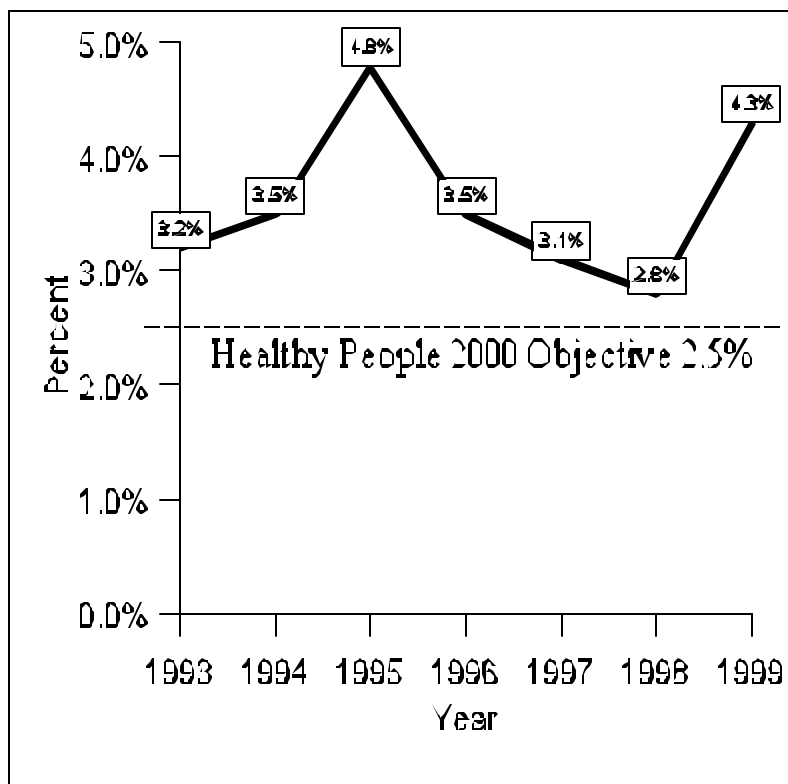
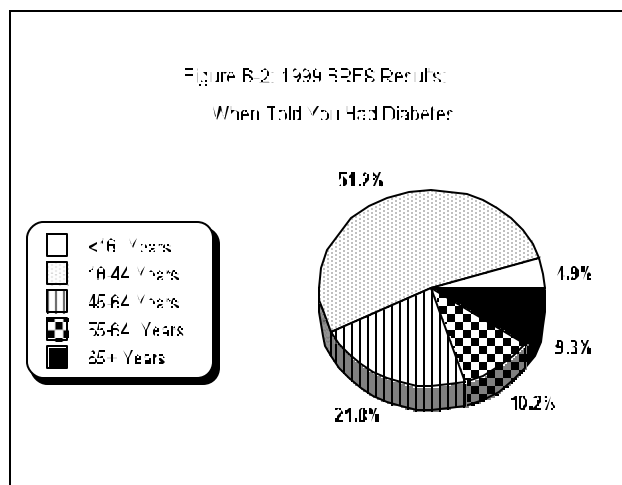


Figure B-1. 1993-1999 percent of BRFSS respondents reporting that they were told they had diabetes along with the Healthy People 2000 Objective 17.11.

who are college graduates (5.4%). The \$50,000-\$74,999 income group (8.0%) had the highest prevalence followed by the \$15,000-\$24,999 group (6.6%). Black, non-Hispanics had the highest percentage reporting being diabetic (10.6%), in contrast to White, non-Hispanics (3.8%).

Examination of respondents who said they were diabetic revealed that 1 out of 2 were told they were diabetic between the age of 18 and 44 years (51.2%), and 21.8%



1999 Arizona BRFS Percentage of persons told by a doctor that they have diabetes (N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	4.3
<u>Sex</u>	
Male	5.1
Female	3.5
<u>Age</u>	
18-24	0.8
25-34	0.4
35-44	2.1
45-54	9.2
55-64	9.9
65+	5.2
<u>Education</u>	
Less Than High School	7.5
High School Graduate or GED	4.3
Some College or Tech School	2.5
College Grad	5.4
<u>Income</u>	
< \$15,000	4.0
\$15-\$24,999	6.6
\$25-\$49,999	3.9
\$50-\$74,999	8.0
>=\$75,000	0.7
Unknown/Refused	2.4
<u>Race/Ethnicity</u>	
White, non-Hispanic	3.8
Black, non-Hispanic	10.6
Hispanic	4.7
Other	7.1

Table B-1. 1999 BRFS results: Percentage of persons told by a doctors that they have diabetes.

were told between the age of 45 and 54 years (Figure B-2). Two out of five of those with diabetes were currently taking insulin (41.9%), and 69.0% checked their blood for glucose or sugar at least once daily (data not shown).

The 1999 Arizona BRFS shows that the percentage of respondents told they had diabetes in Arizona was 4.3%, which is 1.8% higher than the Healthy People 2000 Objective of 2.5%, as defined by the National Center for Health Statistics.

References

1. Diabetes Overview, 1993, Vol. 92 Issue 3235, p1, 5p.
2. National Center for Health Statistics. Healthy People 2000 Review, 1997. Hyattsville, Maryland: Public Health Service. 1997.

C-1. CARDIO-VASCULAR: HIGH BLOOD PRESSURE SCREENING

HIGH BLOOD PRESSURE SCREENING - Respondents reporting that they have not had their blood pressure checked by doctor, nurse or health professional within the past two years.

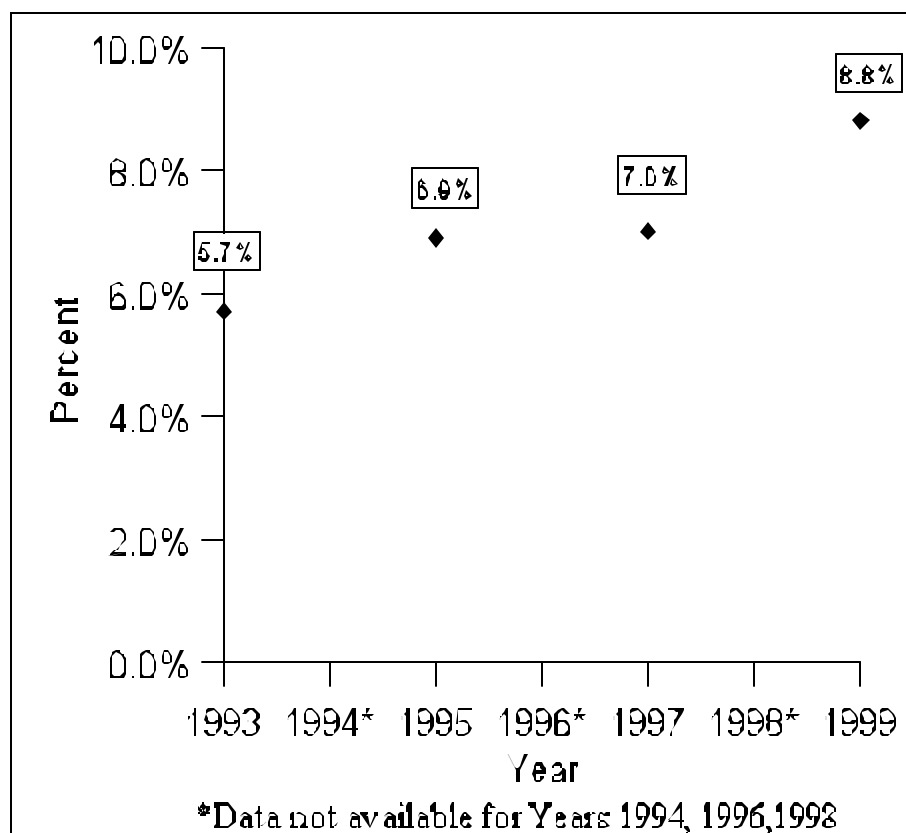


Figure C-1. 1993-1999 percent of BRFs respondents reporting that they have not had their blood pressure checked by a doctor, nurse or health professional within the past two years.

The 1999 Arizona BRFs shows that 8.8% of all respondents reported that they had not had their blood pressure checked by a doctor, nurse or health professional within the past two years. From 1993 to 1999, there was an increasing trend in the proportion of survey respondents reporting that they had not had their blood pressures checked by a health professional, worsening by 3.1%, since 1993 (Figure C-1).

More males compared to females reported that they had not had their blood pressure checked by a doctor, nurse or health professional within the past two years (10.1% vs. 7.6%). Table C-1 shows that among age groups, the highest percentage reporting that they had not had a blood pressure check within the past two years were the

18-24 year age group and the 25-34 year age group (both at 15.6%) followed by the 45-54 year age group (11.7%). Respondents with less than a high school education had the highest prevalence of not having their blood pressure checked within the past two years (26.7%), followed by those who were high school graduates or had a GED (11.6%). Among income groups, respondents with a household income of less than \$15,000 (34.1%), had the highest percentage of persons not having a blood pressure check within the past two years, followed by the \$25,000-\$49,999 income group (16.3%), and respondents with \$15,000-\$24,999 household income (12.1%). Among race/ethnicity groups, almost 2 out of 10 Hispanics reported that they had not had their blood pressure checked within the past two years (19.5%), followed by respondents, who reported their race/ethnicity as 'Other' (9.7%), then by Black, non-Hispanic (6.3%), and White, non-Hispanic (5.4%).

1999 Arizona BRFs Percentage of respondents who reported that they have not had their blood pressure taken by a doctor, nurse, or other health professional within the past two years (N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	8.8
<u>Sex</u>	
Male	10.1
Female	7.6
<u>Age</u>	
18-24	15.6
25-34	15.6
35-44	5.5
45-54	11.7
55-64	4.2
65+	1.4
<u>Education</u>	
Less Than High School	26.7
High School Graduate or GED	11.8
Some College or Tech School	3.2
College Grad	3.5
<u>Income</u>	
< \$15,000	34.1
\$15-\$24,999	12.1
\$25-\$49,999	16.3
\$50-\$74,999	1.3
\$75,000	4.9
Unknown/Refused	11.2
<u>Race/Ethnicity</u>	
White, non-Hispanic	5.4
Black, non-Hispanic	6.3
Hispanic	19.5
Other	9.7
Unknown/Refused	1.4

Table C-1. 1999 BRFs results: Percentage of respondents who reported that they have not had their blood pressure taken by a doctor, nurse, or other health professional within the past two years.

C-2. CARDIO-VASCULAR: HYPERTENSION AWARENESS

HYPERTENSION AWARENESS - Respondents who reported that they have had their blood pressure checked and have been told that their blood pressure is high.

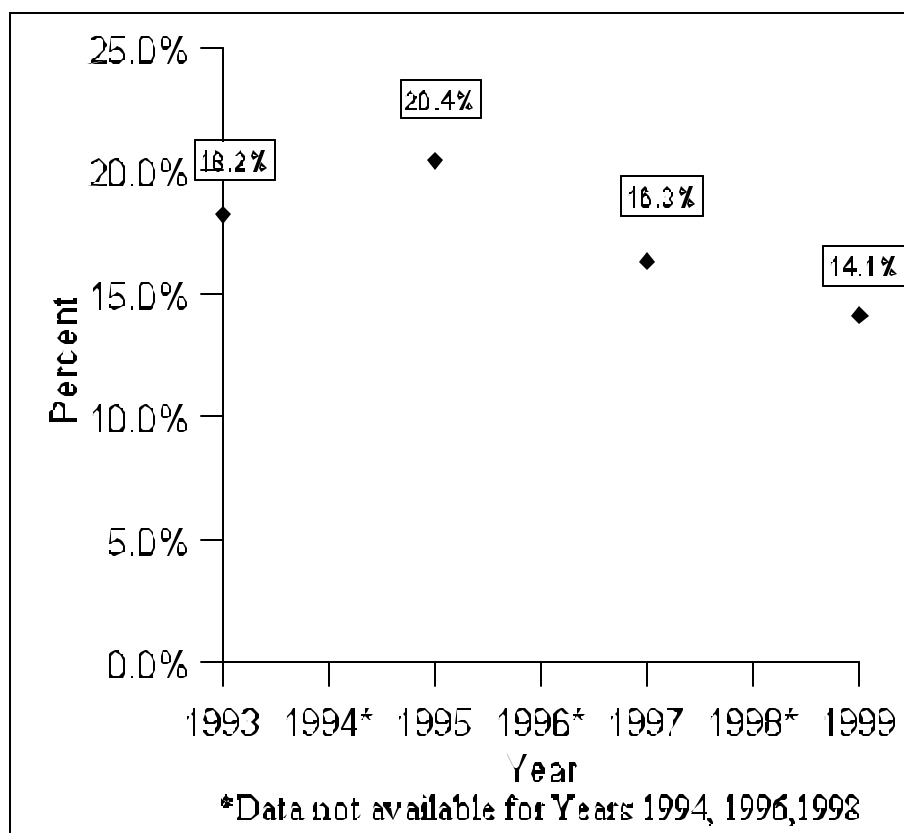


Figure C-2. 1993-1999 percent of BRFs respondents reporting that they have not had their blood pressure checked by a doctor, nurse or health professional within the past two years.

According to the 1999 Arizona BRFs, of all respondents who reported that they have had their blood pressure checked, 14.1% were told that their blood pressure was high. Figure C-2 shows that from 1993 through 1999 there was a downward trend in the proportion of respondents who reported high blood pressure. The percentage of respondents in 1999 who were told that they have high blood pressure is 4.1% lower than the 1993 BRFs data (Figure C-2).

Slightly more males (14.7%) than females (13.4%) reported that they were told that their blood pressure was high (Table C-2). There appeared to be a general positive correlation between age and the risk for hypertension (as age increased, the percentage reported to be at risk for hypertension increased).

Respondents who were 55 years of

age and older were at greatest risk for hypertension, with the 65+ year age group reporting the highest percentage (37.4%). Education, on the other hand, was negatively related to the risk for hypertension, as indicated by the highest prevalence among those who were college graduates (16.4%), followed by those with some college or technical school education (15.6%), and respondents with less than a high-school education (15.4%). About 1 out of 4 of respondents in the \$50,000 - \$74,999 income group (24.9%) were told they were at risk for hypertension, in contrast to the \$25,000 - \$49,999 income group, who had the lowest risk (10.0%). Black, non-Hispanics (20.6%), followed by White, non-Hispanics (17.3%) were the race/ethnic groups reporting the highest prevalence of risk for hypertension.

1999 Arizona BRFs Percentage of respondents who reported that they have had their blood pressure checked and have been told that their blood pressure is high. (N = 1721)	
GROUPS	WEIGHTED PERCENTAGE
Total	14.1
Sex	
Male	14.7
Female	13.4
Age	
18-24	3.7
25-34	3.9
35-44	5.2
45-54	13.3
55-64	20.7
65+	37.4
Education	
Less Than High School	15.4
High School Graduate or GED	11.1
Some College or Tech School	15.6
College Grad	16.4
Income	
< \$15,000	12.3
\$15-\$24,999	13.1
\$25-\$49,999	10.0
\$50-\$74,999	24.9
\$75,000	16.8
Unknown/Refused	15.3
Race/Ethnicity	
White, non-Hispanic	17.3
Black, non-Hispanic	20.6
Hispanic	4.5
Other	7.7
Unknown/Refused	2.4

Table C-2. 1999 BRFs results: Percentage of respondents who reported that they have had their blood pressure checked and have been told that their blood pressure is high

According to respondents who were at risk for hypertension, 42.8% were advised by a doctor to exercise more to lower their risk, and 58.1% of these respondents reported that they were exercising more (data not shown). This is in line with *Healthy People 2000* Objective 15.5, which states that by the year 2000, at least 90% of adults with high blood pressure should take action to help control their blood pressure. It is clear that Arizona has not yet reached this objective.

References

1. National Center for Health Statistics. *Healthy People 2000 Review*, 1997. Hyattsville, Maryland: Public Health Service. 1997.

D-1. CHOLESTEROL SCREENING

CHOLESTEROL SCREENING - Respondents who reported that they never had their cholesterol checked.

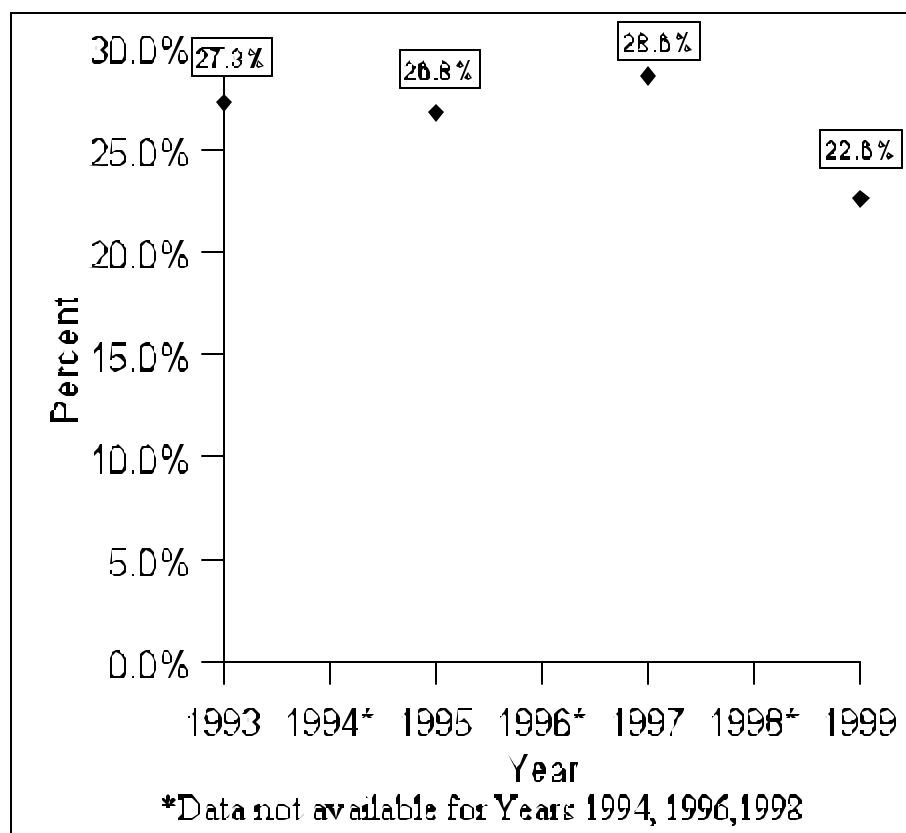


Figure D-1. 1993-1999 percent of BRFs respondents reporting never having their cholesterol checked.

The 1999 Arizona BRFs data show that slightly over 1 in 5 of all respondents (22.6%) reported never having their cholesterol checked. Figure D-1 indicates that there was a 4.7% decrease in the proportion of respondents who reported never having their cholesterol checked between 1993 and 1999.

Table D-1 shows that slightly more males than females said that they never had their cholesterol checked (23.5% vs. 21.8%). As age increases, the percentage of respondents reporting never having their cholesterol checked decreases. Almost 3 out of 5 of the 18-24 year age group reported never having their cholesterol checked (56.4%), followed by the 25-34 year age group (29.7%). Similar to age,

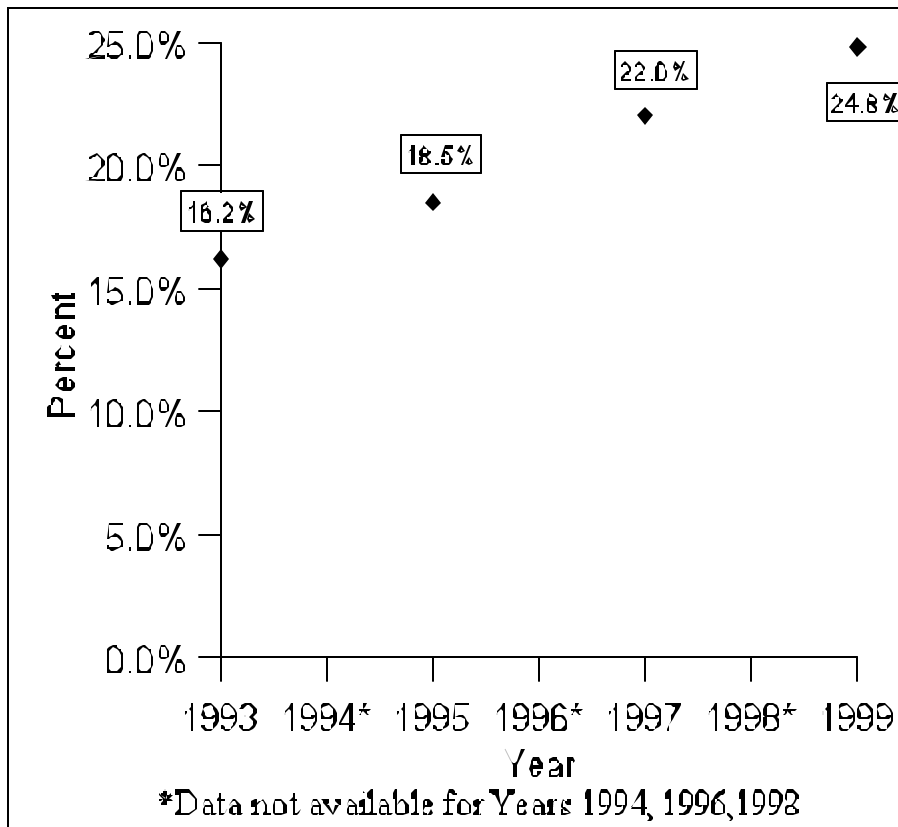
education appeared to be negatively related to cholesterol screening. Respondents with less than a high-school education (36.4%) reported the highest prevalence, in contrast to respondents who are college graduates (15.9%), who reported the lowest. Among income groups, the respondents with less than \$15,000 household income had the highest percentage reporting never having their cholesterol checked (51.3%), followed by the \$15,000 - \$24,999 income group (35.8%), then by the \$25,000 - \$49,999 income group ((20.7%). Hispanics had the highest percentage reporting never having their cholesterol checked (35.8%), followed by 'Other' race/ethnicity (19.0%), then White, non-Hispanics (18.8%).

1999 Arizona BRFs Percentage of respondents who reported never having their cholesterol checked (N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	22.6
<u>Sex</u>	
Male	23.5
Female	21.8
<u>Age</u>	
18-24	56.4
25-34	29.4
35-44	22.7
45-54	15.1
55-64	9.2
65+	6.9
<u>Education</u>	
Less Than High School	36.4
High School Graduate or GED	27.0
Some College or Tech School	17.7
College Grad	15.9
<u>Income</u>	
< \$15,000	51.3
\$15-\$24,999	35.8
\$25-\$49,999	20.7
\$50-\$74,999	9.1
\$75,000	12.0
Unknown/Refused	18.1
<u>Race/Ethnicity</u>	
White, non-Hispanic	18.8
Black, non-Hispanic	15.6
Hispanic	35.8
Other	19.0
Unknown/Refused	4.5

Table D-1. 1999 BRFs results: Percentage of respondents who reported never having their cholesterol checked

D-2. HIGH CHOLESTEROL AWARENESS

HIGH CHOLESTEROL AWARENESS - Respondents who reported that they have ever been told by a health professional that cholesterol was high.



The 1999 Arizona BRFS show that 24.8% of all respondents reported that they have ever been told by a health professional that their cholesterol is high. Figure D-2 shows that there is an upward trend in the proportion of respondents reporting high cholesterol between 1993 and 1999 from 16.2% in 1993 to 24.8% in 1999.

Females were 4.3% at a greater risk than males of having high cholesterol (26.9% and 22.6%, respectively). The risk for high cholesterol increases with age, as manifested by the 65+ year age group reporting the highest prevalence (40.0%), followed by the 55-64 year age group (35.8%), then by the 45-54 year age group (32.7%). Respondents with a high school degree or GED were at greatest risk for high cholesterol

(30.7%), followed by those with less than a high-school education (25.9%), then by those with some college or technical school education (23.5%). Among income groups, respondents with a household income of \$50,000 - \$74,999 had the highest percentage reporting ever being told that their cholesterol was high (37.4%). Respondents in the income groups of \$25,000 - \$49,999 and greater than or equal to \$75,000 annual income follow next in risk for high cholesterol (25.8% and 24.1%, respectively). White, non-Hispanics (28.7%) reported the highest risk for high cholesterol, followed by respondents with 'Other' as race/ethnicity (26.8%), then Black, non-Hispanics (21.4%) (Table D-2).

Further analysis of respondents who said that they had high cholesterol show that 2 out of 5 were advised by their doctor to eat fewer high fat or high cholesterol foods to lower their risk (42.2%).

1999 Arizona BRFs Percentage of respondents who have ever been told by a health professional that their cholesterol was high (N = 1338)	
GROUPS	WEIGHTED PERCENTAGE
Total	24.8
<u>Sex</u>	
Male	22.6
Female	26.9
<u>Age</u>	
18-24	3.9
25-34	11.3
35-44	11.8
45-54	32.7
55-64	35.8
65+	40.0
<u>Education</u>	
Less Than High School	25.9
High School Graduate or GED	30.7
Some College or Tech School	23.2
College Grad	18.1
<u>Income</u>	
< \$15,000	20.0
\$15-\$24,999	17.1
\$25-\$49,999	25.8
\$50-\$74,999	37.4
\$75,000	24.1
Unknown/Refused	23.4
<u>Race/Ethnicity</u>	
White, non-Hispanic	28.7
Black, non-Hispanic	21.4
Hispanic	10.2
Other	26.8

Table D-2. 1999 BRFs results: Percentage of respondents who have ever been told by a health professional that their cholesterol was high

Interestingly, almost 3 out of 5 respondents with high cholesterol reported currently eating fewer high fat or high cholesterol foods (59.8%). This is in line with the *Healthy People 2000* objective 15.8 which states that by the year 2000, 60% of adults with high blood cholesterol who are aware of their condition should take action to reduce their blood cholesterol to recommended levels.¹

References

1. National Center for Health Statistics. Healthy People 2000 Review, 1997. Hyattsville, Maryland: Public Health Service. 1997.

E-1. Women's Health – ROUTINE MAMMOGRAPHY (women age 40 and older)

ROUTINE MAMMOGRAPHY - Female respondents age 40 and older reporting that they have never had a mammogram.

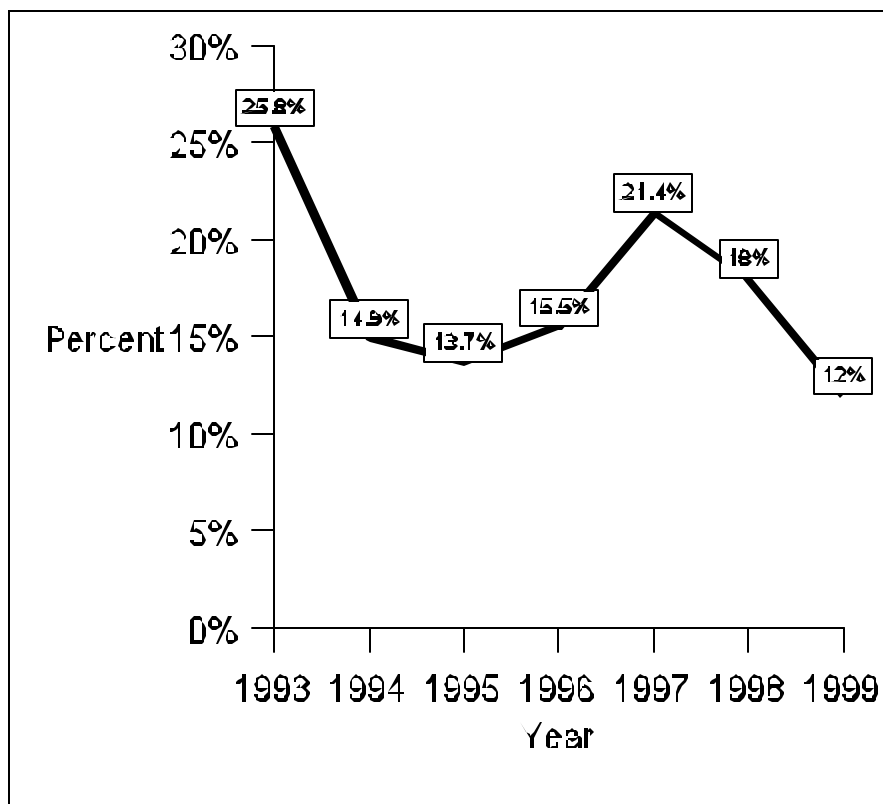


Figure E-1. 1993-1999 percent of BRFs female respondents 40 years of age or older reporting they have never had a mammogram.

The key to reduction in breast cancer mortality is dependent upon successful treatments and early detection. Routine mammography may reduce breast cancer mortality by 30%.¹ Currently, the American Cancer Society recommends that women beginning at age 40 have annual mammograms, annual clinical breast exams performed by a health care professional and should perform monthly self-breast exams.² The benefits of obtaining routine mammograms is the ability of this test to detect tumors smaller than would be detectable using a self breast exam.

Analysis of the 1999 Arizona BRFs data show 12.0% of females 40 years of age or older reported that they had never had a mammogram.

This is the lowest percentage in the

last seven years, showing a very positive trend. Table E-1 shows that the greatest percentage of women responding that they had never had a mammogram were primarily 40-49 years of age (17.9%). Among income groups, the greatest percentage of women over the age of 40 who had never had a mammogram were in the \$15-\$24,999 income bracket (28.9%), followed by the greater than or equal to \$75,000 income bracket (14.9%). Education level is inversely related to the lack of mammography screening (as education level rises, the percentage of respondents who have never had a mammogram decreases). The highest percentage among female respondents (19.4%) who had never had a mammogram had less than a high school education.

1999 Arizona BRFs Percentage of woman age 40 and older never having a mammogram (N=679)	
GROUPS	WEIGHTED PERCENTAGE
Total	12.0
<u>Age</u>	
40-49	17.9
50-59	8.3
60-69	7.8
70+	11.1
<u>Education</u>	
Less Than High School	19.4
High School Graduate or GED	13.5
Some College or Tech School	11.6
College Grad	3.9
<u>Income</u>	
< \$15,000	10.6
\$15-\$24,999	28.9
\$25-\$49,999	5.7
\$50-\$74,999	2.8
\$75,000	14.9
Unknown/Refused	11.5
<u>Race/Ethnicity</u>	
White, non-Hispanic	10.4
Black, non-Hispanic	23.1
Hispanic	17.3
Other Race	22.4

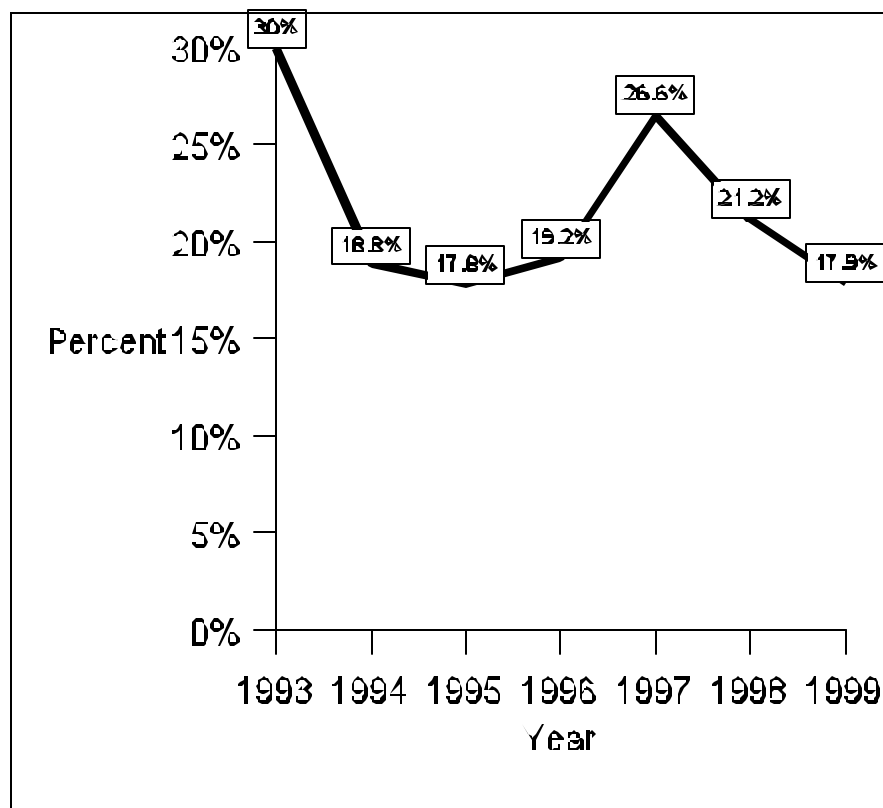
Table E-1. 1999 BRFs results: Percentage of women 40 years of age or older reporting that they never had a mammogram.

References

1. Murphy GP, Lawrence W, Lenhard RE. American Cancer Society Textbook of Clinical Oncology, 2nd Edition. Atlanta, Georgia, 1995.
2. American Cancer Society Cancer Fact and Figures, 1999. American Cancer Society, Atlanta, GA.

E-2. Women's Health – ROUTINE MAMMOGRAPHY AND CLINICAL BREAST EXAM (women age 40 and older)

ROUTINE MAMMOGRAPHY AND CLINICAL BREAST EXAM - Female respondents age 40 and older reporting that they have never had a mammogram and a clinical breast examination.



This BRFs question differs from the previous one by indicating the number of women who have not had any form of a routine breast exam performed. The key to reduction in breast cancer mortality is dependent upon successful treatments and early detection. Routine mammography may reduce breast cancer mortality by 30%.¹ The benefits of obtaining routine mammograms is the ability of this test to detect tumors smaller than would be detectable using a self breast exam. Smaller tumors are more likely to be associated with an early stage of breast cancer and thereby respond to treatment better.

Figure E-2. 1993-1999 percent of BRFs female respondents 40 years of age or older reporting they have never had a mammogram and a clinical breast exam.

Analysis of the 1999 Arizona BRFs shows 17.9% of females 40 years of age or older responded

that they had never had a mammogram and a clinical breast exam. Table E-2 shows that the greatest percentage of women responding that they had never had a mammogram and/or a clinical breast exam were primarily 40-49 years of age (21.0%). Among income groups, the greatest percentage of women over the age of 40 who had never had a mammogram and a clinical breast exam were in the \$15-\$24,999 income bracket (36.2%), followed by the < \$15,000 annual income bracket (34.7%). Black, non-Hispanics had the highest percentage of women who reported never having a mammogram and a clinical breast exam (27.9%), followed by Hispanic respondents (25.4%).

1999 Arizona BRFS Percentage of woman age 40 and older never having a mammogram and a clinical breast exam (N=679)	
GROUPS	WEIGHTED PERCENTAGE
Total	17.9%
<u>Age</u>	
40-49	21.0
50-59	17.2
60-69	12.9
70+	18.9
<u>Education</u>	
Less Than High School	27.9
High School Graduate or GED	21.0
Some College or Tech School	16.5
College Grad	5.9
<u>Income</u>	
< \$15,000	34.7
\$15-\$24,999	36.2
\$25-\$49,999	7.5
\$50-\$74,999	15.3
\$75,000	14.9
Unknown/Refused	17.9
<u>Race/Ethnicity</u>	
White, non-Hispanic	16.3
Black, non-Hispanic	27.9
Hispanic	25.4
Other Race	22.4

Table E-2. 1999 BRFS results: Percentage of women 40 years of age or older reporting that they never had a mammogram and a clinical breast exam.

Reasons for delayed medical care in response to discovering a breast lump from a self breast exam include, interpretation of symptoms as non-threatening and economic limitations to accessing services.²

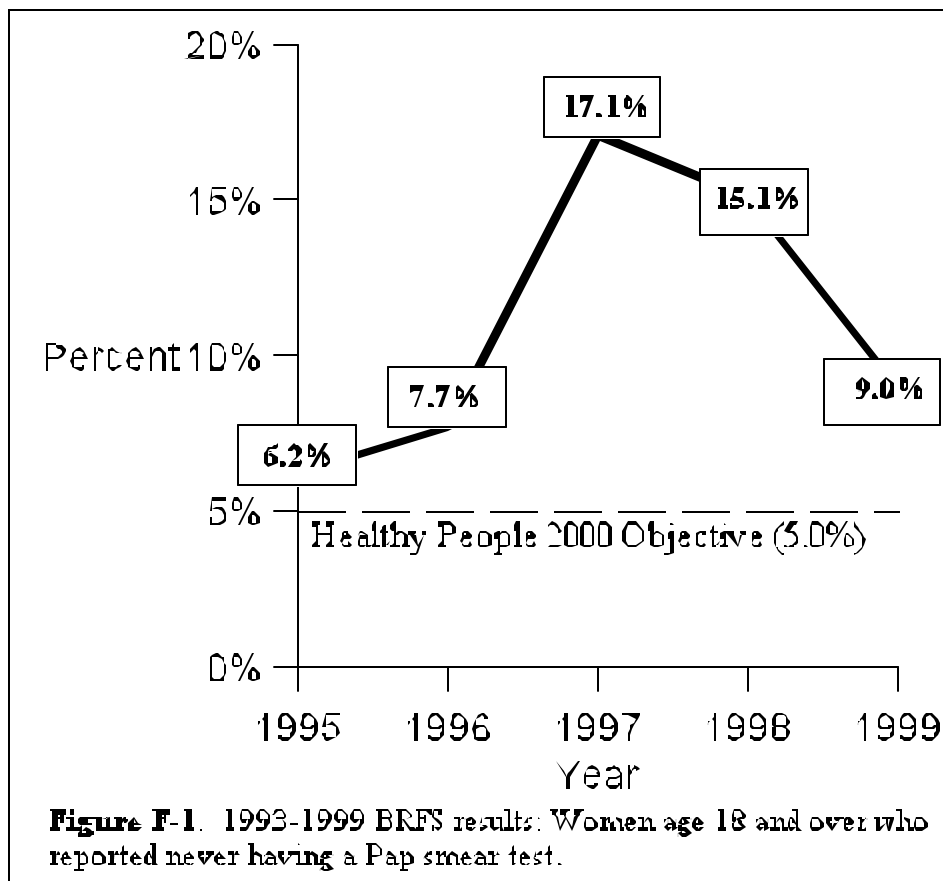
References

1. Murphy GP, Lawrence W, Lenhard RE. American Cancer Society Textbook of Clinical Oncology, 2nd Edition. Atlanta, Georgia, 1995.
2. Facione NC, Dodd MJ, Holzemer W, Meleis AI. Helpseeking for Self-Discovered Breast Symptoms. Implications for Early Detection. Cancer Pract., 1997; 5(4): 220-227.

F. Women's Health – ROUTINE PAP SMEAR (women age 18 and older)

ROUTINE PAP SMEAR - Female respondents age 18 and older reporting that they have never had a Pap smear.

The most effective method of diagnosing pre-cancerous conditions (cervical dysplasia) and localized early stage cervical cancer is effective routine screening using Pap smear testing of all women. Routine screening programs using Pap smear testing can reduce incidence and, thus, mortality, of cervical cancer by 93%.¹



Analysis of the 1999 Arizona BRFSS shows 9.0% of females 18 years of age or older responded that they had never had a Pap smear test to screen for cervical cancer. This trend has been steadily declining since 1997 when 17% of women respondents over age 18 reported never having a Pap smear. However, the Healthy People 2000 objective 16.12 indicates that by the year 2000 only 5% of women age 18 and older will not have ever received a Pap smear test. Arizona has not yet met that objective.

The 1999 BRFSS shows that the greatest percentage of women responding that they had never had a Pap smear test are primarily 18-24 years of age (28.4%). Less than 10% of respondents, from all other age brackets, reported never having had a Pap smear (see Table F-1). The younger population of women (ages 18-24) were less likely to receive annual Pap smear tests, and were considered to be at increased risk for the Human Papilloma Virus (HPV), a sexually transmitted disease associated with cervical cancer, that can be detected with a Pap smear test.² Increased awareness of the importance of receiving annual Pap smear tests is essential for all women, but especially for younger women who might be at increased risk for HPV.

1999 Arizona BRFS Percentage of woman age 18 and older never having a Pap Smear (N=724)	
GROUPS	WEIGHTED PERCENTAGE
Total	9.0%
<u>Age</u>	
18-24	28.4
25-34	7.6
35-49	2.3
50-64	7.9
65+	4.6
<u>Education</u>	
Less Than High School	17.7
High School Graduate or GED	8.6
Some College or Tech School	8.6
College Grad	3.7
<u>Income</u>	
< \$15,000	11.3
\$15-\$24,999	8.7
\$25-\$49,999	3.2
\$50-\$74,999	--
\$75,000	7.7
Unknown/Refused	15.4
<u>Race/Ethnicity</u>	
White, non-Hispanic	4.2
Black, non-Hispanic	5.6
Hispanic	18.7
Other Race	22.3

Table F-1. 1999 BRFS results: Percentage of women 18 years of age or older reporting that they never had a Pap smear test.
 – Too few respondents to calculate a percentage.

The greatest percentage of women who had never had a Pap smear were of “Other” race/ethnicity (22.3%), followed by Hispanic respondents (18.7%). Among income groups, the highest percentage of women who reported that they had never had a Pap smear was in the <\$15,000 income bracket (11.3%), and among education levels, the greatest percentage was among respondents who had less than a high school education (17.7%).

References

1. Eddy DM. Screening for Cervical Cancer. *Annals Internal Medicine* 1990, vol 113, pgs 214-226.
2. Cervical Cancer Resource Center, American Cancer Society, Atlanta, GA, 2000.

G-1. Colorectal Cancer Screening – SIGMOIDOSCOPY (persons age 50 and older)

SIGMOIDOSCOPY - Respondents age 50 and older reporting that they have never had a sigmoidoscopy.

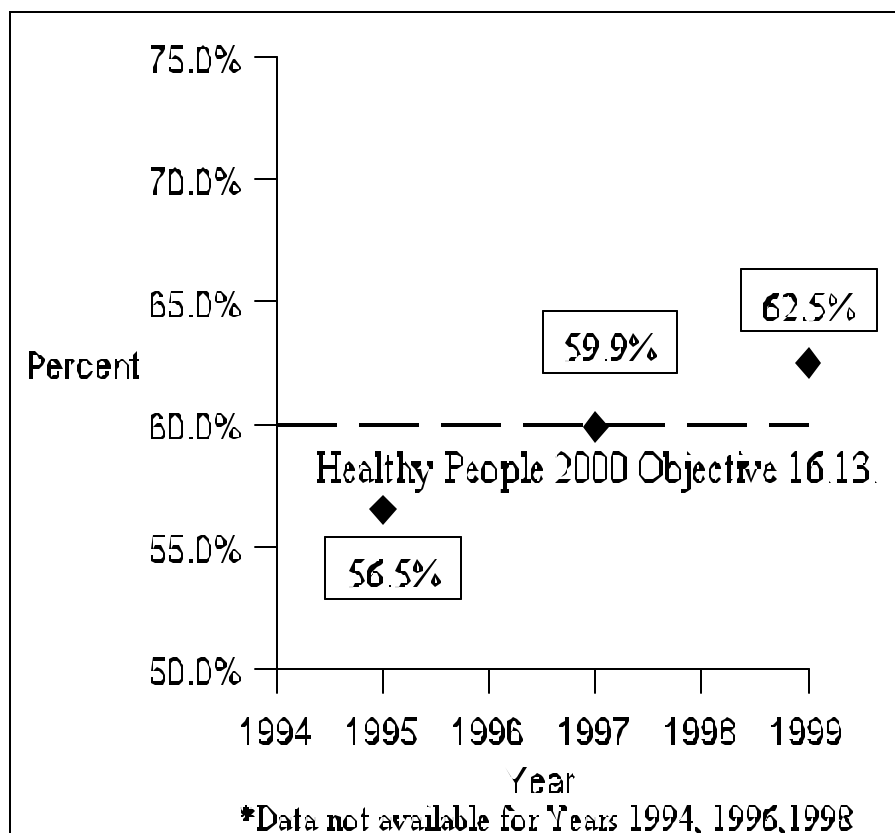


Figure G-1. 1993-1999 percent of BRFs respondents 50 years of age or older reporting they have never had a sigmoidoscopy.

Excluding cancers of the skin, cancer of the colon and rectum combined (i.e. colorectal cancer) is the third most common malignancy in terms of new cases and deaths among men and women in the United States.¹

Existing screening tests have been shown to reduce death rates from colorectal cancer, either by detecting and removing adenomatous polyps before they become cancer, or by detecting and removing early stage colorectal cancers when the disease is still highly curable.

The American Cancer Society recommends that men and women have a blood stool test annually and sigmoidoscopy every 5 years beginning at age 50.² Screening tests such as the sigmoidoscopy

and the blood stool test have been determined to be effective in reducing the risk of death from colorectal cancer.³

The Healthy People 2000 objective 16.13 states that by the year 2000, 60% of persons age 50 and older will not have ever received a sigmoidoscopy. Since 1995, the percentage of respondents who report never having a sigmoidoscopy has increased steadily. The 1999 Arizona BRFs results show that of people age 50 and older, the highest percentage of persons who did not have a sigmoidoscopy were in the 50-59 age group (66.6%). Among income groups, the highest prevalence of not having a sigmoidoscopy among persons age 50 and older steadily increased with increased annual income, with the \$50-\$74,999 annual income bracket having the highest percentage of persons who had never had a sigmoidoscopy (76.5%).

1999 Arizona BRFS Percentage of persons age 50 and older never having a sigmoidoscopy (N=829)	
GROUPS	WEIGHTED PERCENTAGE
Total	62.5
<u>Sex</u>	
Male	61.3
Female	63.4
<u>Age</u>	
50-59	72.3
60-69	56.9
70+	57.9
<u>Education</u>	
Less Than High School	65.4
High School Graduate or GED	71.3
Some College or Tech School	58.6
College Grad	52.2
<u>Income</u>	
< \$15,000	47.5
\$15-\$24,999	53.3
\$25-\$49,999	65.9
\$50-\$74,999	76.5
\$75,000	58.0
Unknown/Refused	61.1
<u>Race/Ethnicity</u>	
White, non-Hispanic	61.0
Black, non-Hispanic	44.9
Hispanic	70.3
Other Race	82.9

Table G-1. 1999 BRFS results: Percentage of persons 50 years of age or older reporting that they never had a sigmoidoscopy.

The highest percentage of persons never having a sigmoidoscopy among education levels were persons who had a high school diploma or GED only (71.3%).

References

- 1.Landis SH, Murray T, Bolden S, Wingo PA. Cancer statistics, 1998. CA Cancer J Clin. 1998; 48: 6-29.
- 2.Cancer Facts and Figures 1999. American Cancer Society, Atlanta, GA 1999.

G-2. Colorectal Cancer Screening – BLOOD STOOL KIT TEST (persons age 50 and older)

BLOOD STOOL KIT TEST - Respondents age 50 and older reporting that they have never had a blood stool kit test.

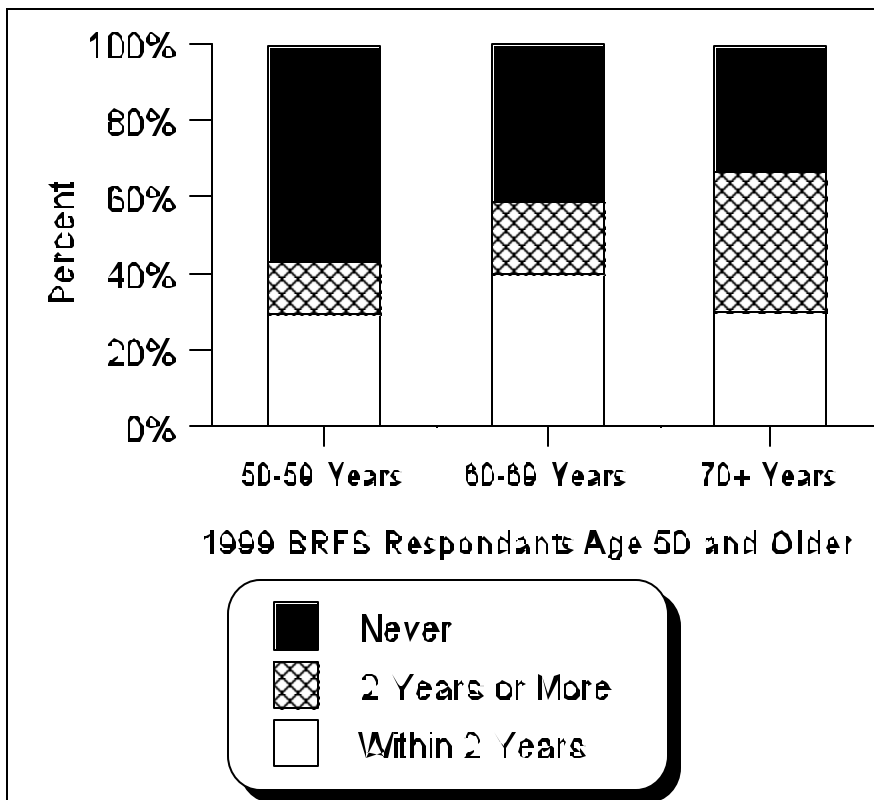


Figure G-2. 1993-1999 percent of BRFs respondents 50 years of age or older reporting they have never had a blood stool test.

Some risk factors for colon cancer are age, family history of colon cancer, diet high in animal fats, lack of regular physical activity, and obesity.¹ A large number of colorectal cancers could be prevented by appropriate modifications in diet and the adoption of regular physical activity.²

Cancerous tumors, and occasionally polyps, can be a source of bleeding in the intestine. The blood stool kit test examines samples of stool for the presence of hidden blood. Persons receive a kit to take home along with dietary instructions to follow for several days before beginning the test. The test consists of taking samples of stool and returning the kit to the doctor's office or laboratory for evaluation.³

The American Cancer Society

recommends that men and women have a blood stool test annually and sigmoidoscopy every 5 years beginning at age 50.²

The 1999 Arizona BRFs results show that of people age 50 and older, the highest percentage of persons who did not have a blood stool test were in the 50-59 age group (56.3%). Table G-2 shows that the highest percentage of persons age 50 and older not having a blood stool test were among persons in the <\$15,000 annual income bracket (51.3%), followed by persons in the \$15-\$24,999 income bracket. Persons who were a student/homemaker have the highest percentage of never having taken a blood stool kit test (73.0%). Within education levels, persons who had less than a high school education had the highest percentage of never having a blood stool kit test (82.8%).

1999 Arizona BRFs Percentage of persons age 50 and older never having a blood stool test (N=829)	
GROUPS	WEIGHTED PERCENTAGE
Total	43.5
<u>Sex</u>	
Male	44.1
Female	43.0
<u>Age</u>	
50-59	56.3
60-69	41.2
70+	33.3
<u>Education</u>	
Less Than High School	82.8
High School Graduate or GED	41.8
Some College or Tech School	41.6
College Grad	31.4
<u>Income</u>	
< \$15,000	51.3
\$15-\$24,999	50.7
\$25-\$49,999	34.5
\$50-\$74,999	21.7
\$75,000	41.0
Unknown/Refused	56.2
<u>Race/Ethnicity</u>	
White, non-Hispanic	38.6
Black, non-Hispanic	70.9
Hispanic	74.6
Other Race	55.2

Table G-2. 1999 BRFs results: Percentage of persons 50 years of age or older reporting that they never had a blood stool test.

References

1. Harvard Center for Cancer Prevention. Harvard Report on Cancer Prevention Volume 1: Causes of Human Cancer. Can Causes Control. 1996; 7 (S1): 7-15.
2. Cancer Facts and Figures 1999. American Cancer Society, Atlanta, GA 1999.

H. OVERWEIGHT (BMI)

OVERWEIGHT (BMI) - Respondents reporting weights exceeding BMI limits (Female with a BMI 27.2, Males with a BMI 27.8).

During the past ten years, increases in the prevalence of obesity have been documented. In the United States an estimated 55.0% of adults are considered overweight or obese.¹ The body mass index (BMI) is a relationship

between weight and height and is used to determine obesity and assess health risk. BMI is calculated using the following formula: $(\text{pounds} * 0.454) \div (\text{inches} * 0.0254)^2$ or (Kg/M^2) .

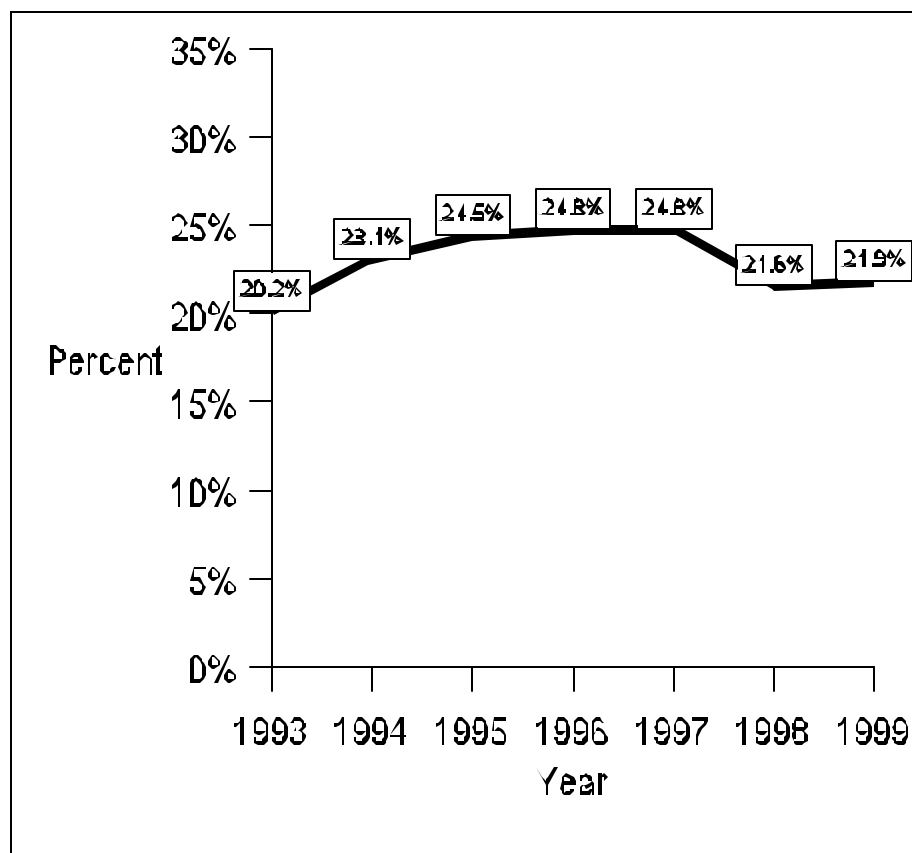


Figure H-1. 1993-1999 percent of BRFs respondents reporting weights which exceed BMI limits.

According to the 1999 Arizona BRFs, 21.9% of respondents exceeded the BMI standard for overweight (Figure H-1). The groups with the largest percentage of persons who were overweight were Hispanics (30.9%), followed by White, non-Hispanics (19.5%). Persons between 45 and 54 years of age had the highest percentage (27.0%), followed by persons within the 35 to 44 age bracket (25.0%). The highest percentage of persons reporting weights that exceeded BMI limits were among those with less than a high school education (33.3%).

Healthy People 2000 Objective 1.2 lists the goal to reduce overweight to a prevalence of 20% among adults 20

years of age or older (defined as a BMI 27.8 for men and a BMI 27.3 for women) and 15% among adults 18 to 19 years of age (defined as a BMI 25.8 for men and a BMI 25.7 for women).⁴ Several diseases are associated with obesity, and even modest weight losses can result in reduced risk.

The health effects of weight control has received extensive review, with the following major findings: *Cardiovascular Disease* - The optimal BMI regarding this disease is 22.6 for men and 21.1 for women. At those levels, there appears to be 25% less heart disease and 35% fewer strokes or episodes of heart failure.² *Diabetes* - In both men and women, the highest incidence of diabetes occurs at a BMI greater than 28.³ Between 80% and 90% of people with Type II diabetes mellitus are obese.²

1999 Arizona BRFs Percentage of overweight persons (BMI) (N=1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	21.9
<u>Sex</u>	
Male	24.2
Female	19.7
<u>Age</u>	
18-24	13.7
25-34	21.8
35-44	25.0
45-54	27.0
55-64	23.2
65+	18.9
<u>Education</u>	
Less Than High School	33.3
High School Graduate or GED	21.4
Some College or Tech School	18.8
College Grad	22.2
<u>Income</u>	
< \$15,000	17.4
\$15-\$24,999	24.0
\$25-\$49,999	21.0
\$50-\$74,999	19.0
\$75,000	35.7
Unknown/Refused	21.4
<u>Race/Ethnicity</u>	
White, non-Hispanic	19.5
Black, non-Hispanic	17.5
Hispanic	30.9
Other Race	17.1

Table H-1. 1999 BRFs results: Percentage of persons with BMI 27.3 (females) or BMI 27.8 (males).

Hypertension - Risk of hypertension increases with a BMI of greater than 22. Hypertension is two times more common among obese persons.²

Osteoarthritis - There is an increased incidence of osteoarthritis at a BMI of 25 or greater.³ In men, a decrease of approximately four BMI units resulted in a 21.4% decrease in the rate of symptomatic osteoarthritis of the knee.³

Selected Cancers - There is an increased risk of endometrial cancer in women with a BMI greater than 28. Similarly, there is an increased risk of breast cancer, especially after menopause, in women with BMI greater than 26.²

References

1. National Heart, Lung, and Blood Institute & National Institute of Diabetes and Digestive and Kidney Diseases, 1998
2. Shape Up America, American Obesity Association. Guidance for Treatment of Adult Obesity. Bethesda: Shape Up America; 1996:1-95.
3. St. Jeor ST, Brownell KD, Atkinson RL. New Multidisciplinary Strategies in Obesity Management. Clark, New Jersey: Health Learning Systems; 1997.
4. National Center for Health Statistics. Healthy People 2000 Review, 1997. Hyattsville, Maryland: Public Health Service. 1997.

I. CIGARETTE SMOKING – Current Smoking

CIGARETTE SMOKING - Respondents reporting smoking 100 cigarettes during their lifetime who smoke now (regularly and/or irregularly).

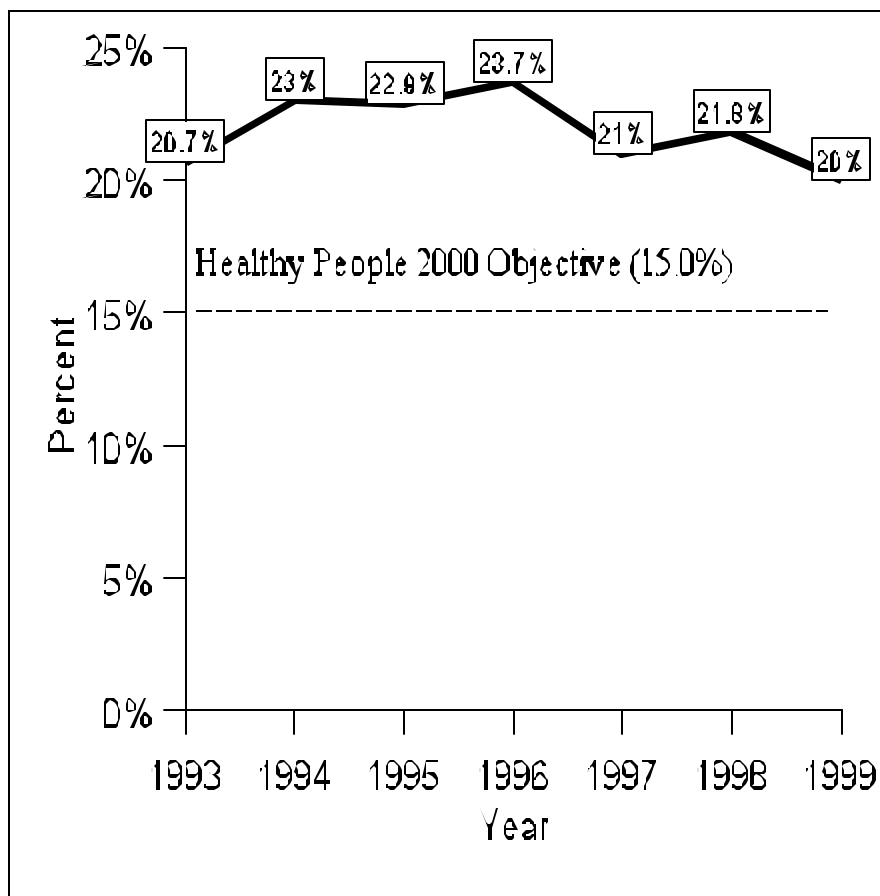


Figure I-1. 1993-1999 percent of BRFs respondents reported that they were current smokers along with the Healthy People 2000 Objective 3.4.

According to the 1999 Arizona BRFs, 20.0% of those surveyed reported that they were currently smokers. This percentage has decreased slightly from 1998, and is at a 7 year low since 1993 (Figure I-1). Table I-1 shows that more males (23.6%) said they were smokers than females (16.6%). Respondents considered “Other” race had the highest percentage of smokers (25.2%) followed by White, non-Hispanics (23.0%). The 45-54 age groups had the highest percentage of smokers (28.3%) while the 18-24 age group and the 25-34 age group had the lowest percentage of smokers (18.4% and 18.2%, respectively). Respondents with income less than \$15,000 had the highest percentage of smokers (27.6%), and respondents with \$25-\$49,999 had the second highest percentage of smokers (26.3%). Respondents with some college or technology school experience had the highest percentage of smokers

(23.8%), followed by respondents with a high school diploma or GED (19.8%).

The 1999 BRFs shows a decrease of 1.8% in the rate of adult smokers from the 1998 BRFs Report. Regardless, Arizona’s smoking rates are still higher than the Healthy People 2000 objective 3.4 that set the target reducing cigarette smoking to no more than 15% among persons 18 years of age or older.¹ Continued efforts to prevent initial smoking behavior in adolescents, as well as efforts to promote smoking cessation in current smokers using techniques which have documented effectiveness, may decrease the rate of Arizona smokers to meet the *Healthy People 2000 Objective 3.4*.

1999 Arizona BRFS Percentage of Arizona adults who currently smoke (N=1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	20.0
<u>Sex</u>	
Male	23.6
Female	16.6
<u>Age</u>	
18-24	18.4
25-34	18.2
35-44	19.2
45-54	28.3
55-64	23.3
65-74	20.8
75+	6.8
<u>Education</u>	
Less Than High School	15.8
High School Graduate or GED	19.8
Some College or Tech School	23.8
College Grad	16.7
<u>Income</u>	
< \$15,000	27.6
\$15-\$24,999	15.2
\$25-\$49,999	26.3
\$50-\$74,999	17.2
\$75,000	4.7
Unknown/Refused	18.4
<u>Race/Ethnicity</u>	
White, non-Hispanic	23.0
Black	15.8
Hispanic	11.3
Other	25.2

References

1. National Center for Health Statistics. Healthy People 2000 Review, 1997. Hyattsville, Maryland: Public Health Service. 1997.

Table I-1. 1999 BRFS results: Percentage of persons reporting that they are current smokers and have smoked at least 100 cigarettes in their life.

J-1. ALCOHOL - ACUTE (BINGE) DRINKING

ACUTE (BINGE) DRINKING - Respondents reporting that they had five or more drinks on one or more occasions, in the past month.

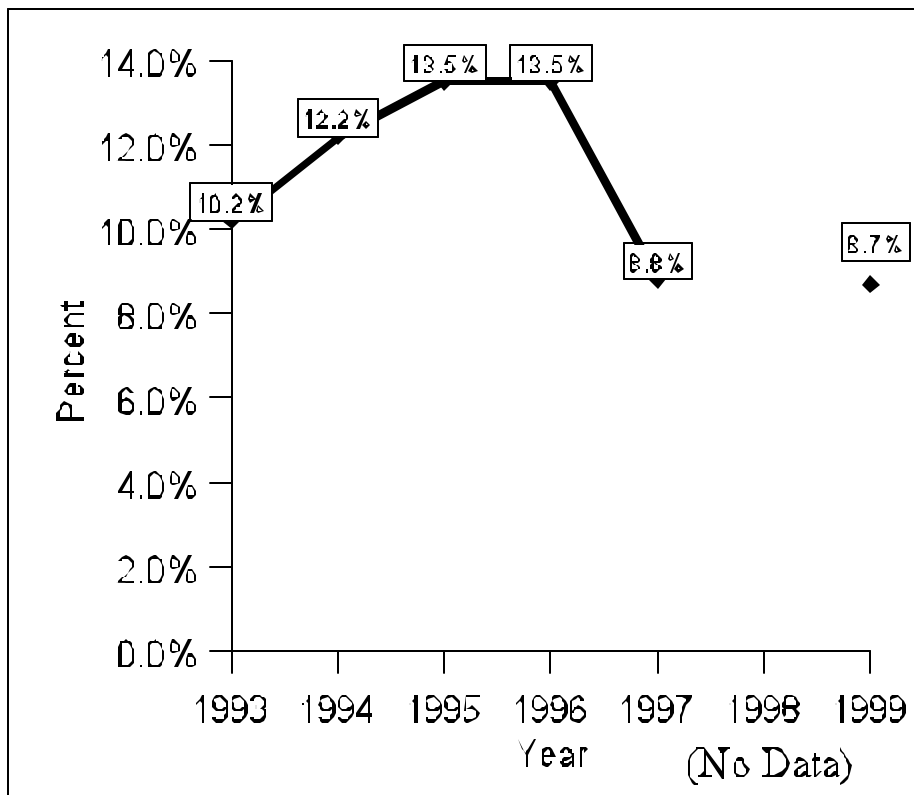


Figure J-1. 1993-1999 percent of BRFSS respondents reporting that they had five or more drinks per occasion within the past month.

Major hazards to health and well-being occur when alcohol is misused. Medical consequences arise from alcohol toxicity and the increased risk of injury or death while under the influence of alcohol. Costs related to increased health care expense are estimated adequately enough, however other costs related to alcohol misuse are more difficult to measure, i.e. family life disruption, increased crime and violence, lowered self-esteem, increased employee absenteeism and decreased employee performance.

Analysis of the 1999 Arizona BRFSS shows that 8.7% of all respondents reported binge drinking behavior. Data in Figure J-1 show that while there was a downward trend from 1993 to 1997, there was no change in the

proportion of respondents reporting that they had five or more drinks in one or more occasions in the past month between 1997 and 1999.

Table J-1 shows that more males (14.3%) reported this behavior than females (3.4%). The highest percentage of binge drinking was reported among those who were less than 35 years old, and the highest prevalence of this risk was among the 18-24 year age group (18.8%). Respondents with some college or technical school education (10.5%) had the highest prevalence followed by those with less than high-school education (7.7%), and high-school graduates or GED (7.6%). Respondents with household incomes greater than \$75,000 (19.6%) reported the highest proportion of binge drinking, followed by those with incomes of \$50,000-\$74,000 (12.0%). Among race/ethnicity groups, the 'Other' race/ethnicity group had the highest prevalence of binge drinking (21.7%) and the lowest prevalence are reported by Hispanics at 7.1%.

1999 Arizona BRFs Percentage of persons who reported that they had five or more drinks on one or more occasions, in the past month.(N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	8.7
<u>Sex</u>	
Male	14.3
Female	3.4
<u>Age</u>	
18-24	18.8
25-34	11.8
35-44	9.2
45-54	5.6
55-64	7.0
65+	1.9
<u>Education</u>	
Less Than High School	7.7
High School Graduate or GED	7.6
Some College or Tech School	10.7
College Grad	8.1
<u>Income</u>	
< \$15,000	10.0
\$15-\$24,999	4.0
\$25-\$49,999	8.9
\$50-\$74,999	12.0
\$75,000	19.6
Unknown/Refused	9.1
<u>Race/Ethnicity</u>	
White, non-Hispanic	8.6
Black, non-Hispanic	8.9
Hispanic	7.1
Other	21.7

Table J-1. 1999 BRFs results: Percentage of respondents who reported that they have had five or more drinks on one or more occasion, in the past month.

References

1. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, U.S. Public Health Service. Disease Prevention/Health Promotion: The Facts, 1988.

J-2. ALCOHOL - CHRONIC DRINKING

CHRONIC DRINKING - Respondents reporting that they had on average 60 drinks or more alcoholic drinks a month.

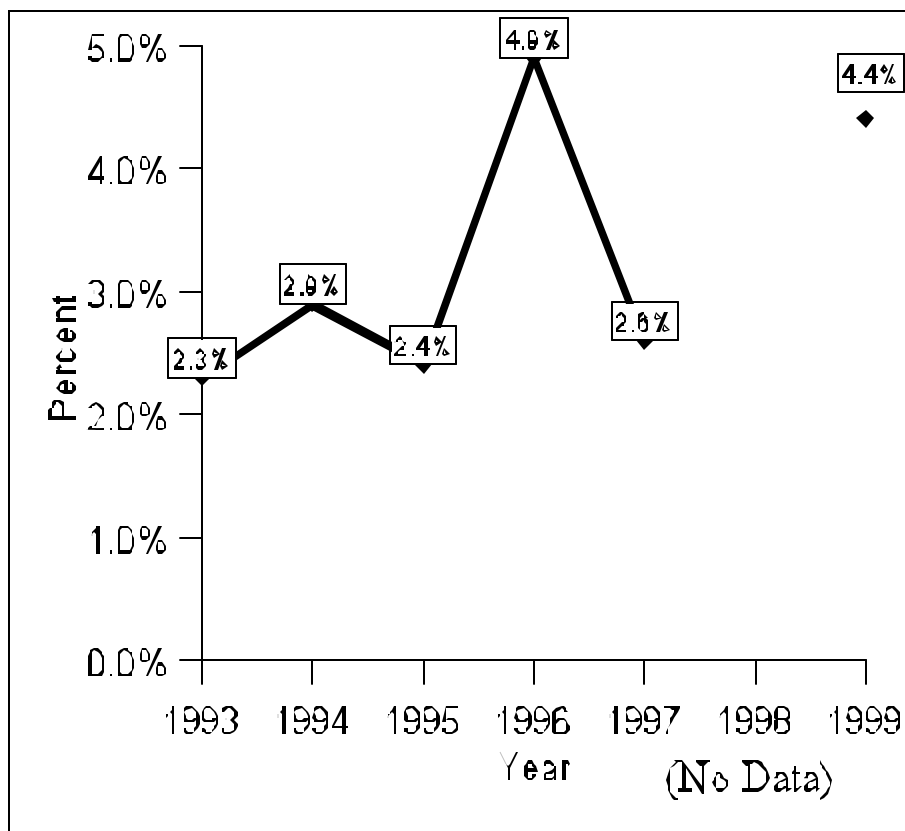


Figure J-2. 1993-1999 percent of BRFSS respondents reporting that they had on average 60 or more alcoholic drinks a month.

Alcohol abuse is associated with several forms of illness, injury and death. While alcoholism was not among the leading causes of death in 1999, the death rate for alcoholism was 6.9 per 100,000 (age-adjusted) population which is 42 percent lower than the 11.9/100,000 in 1980.¹

In the 1999 Arizona BRFSS, 4.4% of all respondents reported that they had on the average 60 alcoholic drinks or more per month (Figure J-2). This was 1.8% higher than the percentage of all respondents who reported chronic drinking in 1997.

Data in Table J-2 show that chronic drinking was higher among males (8.5%) than females (0.4%). Among age groups, the 55-64 year age groups reported the highest

prevalence of chronic drinking (6.7%), followed by the 45-54 year age group (5.0%), the 35-44 year age group (4.6%), the 25-34 year age group (4.4%), the 65+ year age group (3.3%), and lastly by the 18-24 year age group (2.5%). Respondents with a high school degree or GED reported the highest risk for chronic drinking (5.6%), followed by those with less than a high school education (4.7%). Respondents with household incomes of less than \$15,000 reported the highest percentage of chronic drinking (9.6%), followed by respondents who refuse to give their total household income (4.9%), and by the \$50,000-\$74,999 income group (4.4%). Among race/ethnic groups, White, non-Hispanics had the highest prevalence of chronic drinking (5.1%), followed by Hispanics (3.2%).

1999 Arizona BRFs Percentage of respondents who reported that they had on average 60 or more drinks per month.(N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	4.4
<u>Sex</u>	
Male	8.5
Female	0.4
<u>Age</u>	
18-24	2.5
25-34	4.4
35-44	4.6
45-54	5.0
55-64	6.7
65+	3.3
<u>Education</u>	
Less Than High School	4.7
High School Graduate or GED	5.6
Some College or Tech School	2.5
College Grad	5.1
<u>Income</u>	
< \$15,000	9.6
\$15-\$24,999	3.1
\$25-\$49,999	4.2
\$50-\$74,999	4.4
\$75,000	1.9
Unknown/Refused	4.9
<u>Race/Ethnicity</u>	
White, non-Hispanic	5.1
Black, non-Hispanic	1.2
Hispanic	3.2
Other	1.3

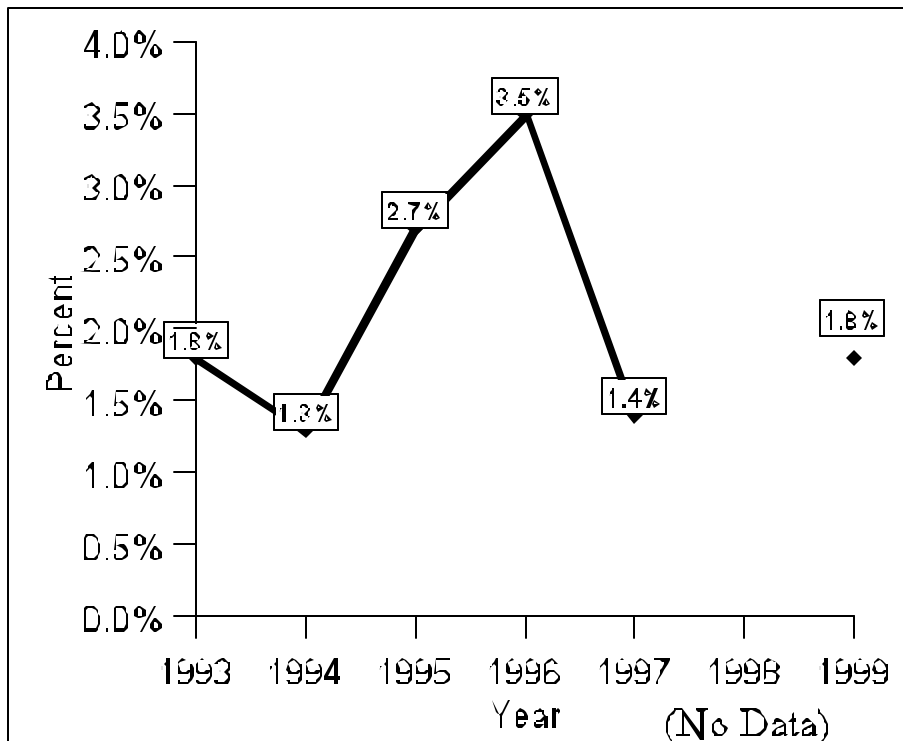
Table J-2. 1999 BRFs results: Percentage of respondents who reported that they had on average 60 or more drinks per month.

References

1. Mrela, CK, Arizona health status and vital statistics, 1999. Bureau of Public Health Statistics. Arizona Department of Health Services

J-3. ALCOHOL - DRINKING AND DRIVING

DRINKING AND DRIVING - Respondents reporting they had driven after having too much to drink one or more times in the past month.



The 1999 Arizona BRFSS shows that 1.8% of all respondents report that they had driven after having too much to drink one or more times in the past month (Figure J-3), which is slightly higher than the proportion of all respondents who reported drinking and driving in 1997.

Table J-3 shows that more males (2.9%) than females (0.8%) reported drinking and driving by more than 3.1%. Among the age groups, the highest percentage reporting drinking and driving behavior was among the 55-64 year age group (3.8%), followed by the 25-34 year age group (3.0%). Respondents with less than a high school education had the highest prevalence of drinking and driving, followed by those with a

Figure J-3. 1993-1999 percent of BRFSS respondents reporting that they had driven after having too much to drink one or more times in the past month.

high school degree or GED (1.9%). Among income groups, those with a household income of less than \$15,000 reported the highest prevalence of this behavior (4.5%), followed by respondents who refused to give their household income (2.9%). Respondents who were considered as 'Other' race/ethnicity had the highest percentage reporting drinking and driving behavior in 1999 (4.0%).

1999 Arizona BRFs Percentage of persons reporting that they had driven after having too much to drink one or more times in the past month. (N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	1.8
<u>Sex</u>	
Male	2.9
Female	0.8
<u>Age</u>	
18-24	1.1
25-34	3.0
35-44	2.8
45-54	0.3
55-64	3.8
65+	0.2
<u>Education</u>	
Less Than High School	3.2
High School Graduate or GED	1.9
Some College or Tech School	1.3
College Grad	1.8
<u>Income</u>	
< \$15,000	4.5
\$15-\$24,999	1.7
\$25-\$49,999	0.7
\$50-\$74,999	1.6
\$75,000	0
Unknown/Refused	2.9
<u>Race/Ethnicity</u>	
White, non-Hispanic	1.7
Black, non-Hispanic	1.2
Hispanic	1.9
Other	4.0

Table J-3. 1999 BRFs results: Percentage of persons reporting that they had driven after having too much to drink one or more times in the past month.

K. LOW FRUIT/VEGETABLE CONSUMPTION

LOW FRUIT/VEGETABLE CONSUMPTION - Respondents reporting that they consume less than 5 servings of fruits and vegetables daily.

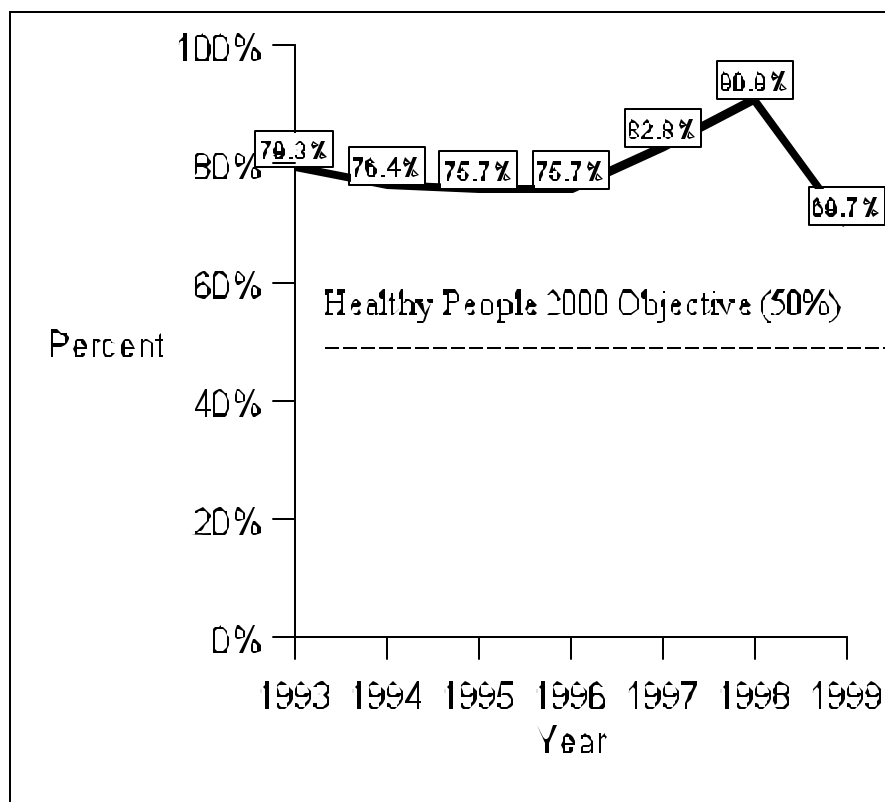


Figure K-1. 1993-1999 percent of BRFSS respondents reporting that they consume less than 5 servings of fruits/vegetables per day along with the Healthy People 2000 Objective 2.6.

It has been known for many years that diet plays a large role in the quality of long-term health. For adults who do not drink excessively or smoke, diet is the most significant controllable risk factor that determines their health status.¹

One of the most important diet habits to follow is the consumption of at least 5 servings of fruits/vegetables per day. Analysis of the 1999 Arizona BRFSS shows that 69.7% of respondents reported that they consumed less than 5 servings of fruits/vegetables per day (Figure K-1). This percentage is dramatically lower than the 1998 results, and was the lowest recorded since 1993. Table K-1 shows the highest percentages of persons who reported that they consumed less

than 5 servings of fruits/vegetables per day were in the 25 to 34 years of age group (74.5%), followed by the 45 to 54 age group (74.0%), the 55 to 64 age group (71.2%), the 35 to 44 age group (67.7%), and the 18 to 24 age group had the lowest percentage of persons who consumed less than 5 fruits and vegetables per day (63.6%). Among education levels, persons with some college or Technical school training (71.4%), had the highest percentage of persons who consumed less than 5 fruits and vegetables daily. Among race categories, Black, non-Hispanic respondents had the highest percentage of people who did not consume 5 or more fruits and vegetables per day (81.6%). In contrast, Hispanic respondents reported having the lowest percentage of people who did not consume 5 or more fruits and vegetables per day (60.1%).

Healthy People 2000 Objective 2.6 set a target of increasing the proportion of persons consuming at least 5 fruits/vegetables per day to at least 50%.² The increase in percentage of people in Arizona who did consume at least 5 fruits or vegetables daily is a move towards achieving that Objective.

1999 Arizona BRFs Percentage of persons NOT consuming at least 5 servings of fruits/vegetables per day (N=1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	69.7
<u>Sex</u>	
Male	69.5
Female	69.9
<u>Age</u>	
18-24	63.6
25-34	74.5
35-44	67.7
45-54	74.0
55-64	71.2
65+	66.7
<u>Education</u>	
Less Than High School	66.2
High School Graduate or GED	70.1
Some College or Tech School	71.4
College Grad	68.2
<u>Income</u>	
< \$15,000	88.1
\$15-\$24,999	46.7
\$25-\$49,999	74.6
\$50-\$74,999	81.8
\$75,000	69.0
Unknown/Refused	73.0
<u>Race/Ethnicity</u>	
White, non-Hispanic	72.6
Black, non-Hispanic	81.6
Hispanic	60.1
Other Race	69.5

Table K-1. 1999 BRFs survey results: Percentage of persons reporting that they do NOT consume at least 5 servings of fruits/ vegetables per day.

References

1. U.S. Department of Health and Human Services. The Surgeon General's Report on Nutrition and Health. Washington: Public Health Service. 1988.
2. National Center for Health Statistics. Healthy People 2000 Review, 1997. Hyattsville, Maryland: Public Health Service. 1997.

L. ORAL HEALTH – Frequency of Dental Visits

ORAL HEALTH - Respondents reporting they have not had a dental visit within the past year.

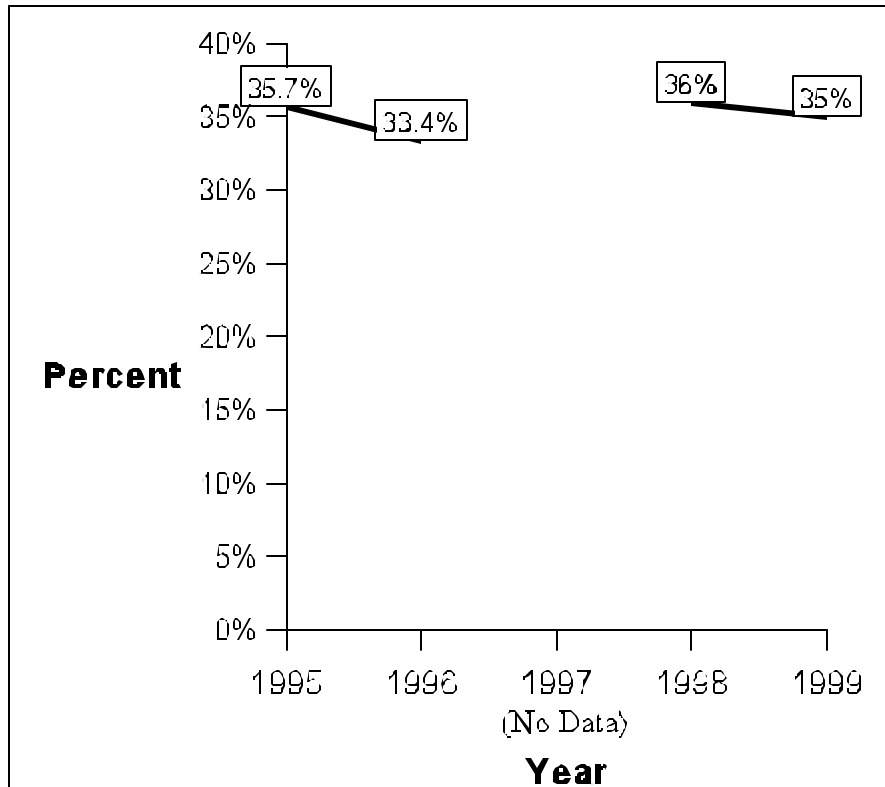


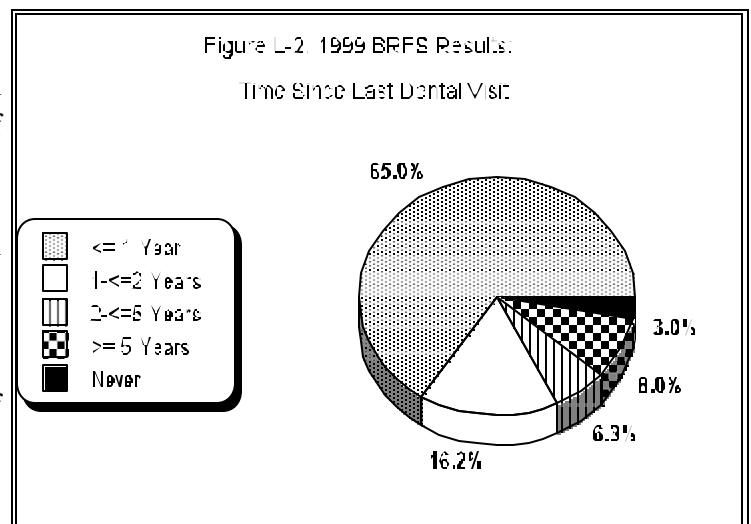
Figure L-1. 1995-1999 Percent of BRFSS respondents reporting that they have not had a dental visit within the past year.

dentist was somewhat more common among males (37.1%) than females (33.1%). Among income groups, persons with an annual income of less than \$15,000 (56.4%) had the highest prevalence of irregular dental visits, followed by persons within the \$15-\$24,999 income bracket (50.8%). Among education levels, those with less than a high school education had the highest percentage of persons who had not visited the dentist within the past year (59.8%). Figure L-2 shows that 3.0% of respondents have never visited the dentist, and that 8.0% of respondents have not visited the dentist in the past 5 years.

About 30,000 Americans are diagnosed with oral and throat cancers annually. There are also more than 8,000 deaths from both diseases each year.¹ The current guidelines for periodontal health maintenance are tooth brushing, flossing and periodic dental checkups. Studies have shown that persons who have regular dental visits have considerable less presence of plaque, gingivitis, and accumulated oral neglect.²

Although oral health diseases, such as tooth decay and periodontal diseases are common health problems in the U.S., 35.0% of respondents from the 1999 Arizona BRFSS reported that they have not seen a dentist within the last 12 months. This trend seemed to remain constant since 1995 when 35.7% of respondents reported not visiting a dentist within the past 12 months.

Table L-1 shows that failure to see a



1999 Arizona BRFs Percentage of persons who have not visited a dentist within the past 12 months (N = 1744)	
GROUPS	WEIGHTED PERCENTAGE
Total	35.0
<u>Sex</u>	
Male	37.1
Female	33.1
<u>Age</u>	
18-24	43.1
25-34	37.7
35-44	34.4
45-54	29.6
55-64	29.6
65+	33.8
<u>Education</u>	
Less Than High School	59.8
High School Graduate or GED	38.8
Some College or Tech School	32.3
College Grad	19.6
<u>Income</u>	
< \$15,000	56.4
\$15-\$24,999	50.8
\$25-\$49,999	28.7
\$50-\$74,999	16.8
\$75,000	13.9
Unknown/Refused	37.2
<u>Race/Ethnicity</u>	
White, non-Hispanic	29.1
Black	38.2
Hispanic	51.7
Other Race	35.2

Table L-1. 1999 BRFs survey results: Percentage of persons reporting that they have not visited a dentist within the past 12 months.

References

1. Centers for Disease Control and Prevention. Improving Oral Health: Preventing Unnecessary Disease Among All Americans, At-A-Glance, 1999.
2. Lang WP, Farghaly MM, Ronis DL. The relation of preventive dental behaviors to periodontal status. J Clin Periodontal, 1994; 21(3): 194-198.

M. HIV/AIDS

HIV/AIDS - Respondents reporting that they have not been tested for HIV.

Human Immunodeficiency Virus or HIV is the virus that causes Acquired Immune Deficiency Syndrome, AIDS. AIDS is a disease that weakens the body's immune system, making a person susceptible to life-threatening opportunistic infections. The age-adjusted death rate from HIV infection for both the United States and Arizona have

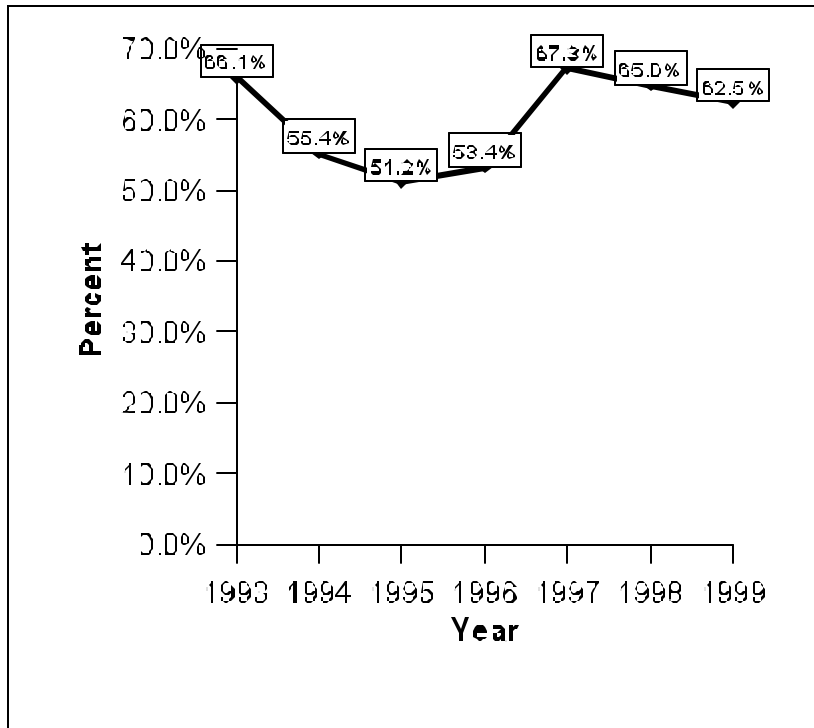


Figure M-1. 1993-1999 Percent of BRFs respondents, age 18-64 years of age reporting that they have not been tested for HIV

continued to decline since 1995¹. Between 1988 and 1998, Arizona continued to have lower age-adjusted death rates from HIV infection than the United States. For 1999, the age-adjusted death rate from HIV infection for Arizona was 2.9/100,000 (data not shown). Mortality from HIV infection was 7.3 times greater for Arizona males than females (5.1/100,000 vs. 0.7/100,000).²

While mortality rates from HIV are declining, it is still vital for people infected with HIV disease to obtain early medical care to slow the disease progression, and improve their length and quality of life. It is estimated that more than half of the people infected with HIV do not know they are infected.³

According to the 1999 Arizona BRFs, about 3 out of 5 (62.5%) of the respondents, age 18 to 64 years reported that they had not been tested for HIV (Figure M-1). This is second

consecutive year where there was an improvement in the proportion reporting that they had not been tested for HIV, by 2.5% from 1998, and by 4.8% from 1997. Figure M-1 also shows the trend since 1993.

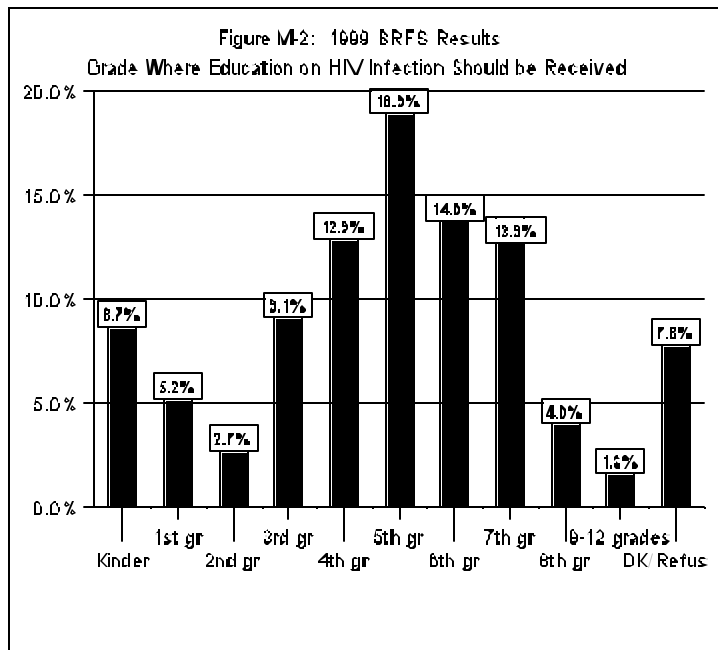
Table M-1 shows that more males (65.1%) than females (58.6%) reported that they had never been tested for HIV. The three age groupings reporting highest prevalence of not having been tested for HIV were the 55 to 64 year age group (74.3%), closely followed by the 18 to 24 year age group (73.9%) and the 25 to 34 year age group (71.8%). There appeared to be an inverse association between education and the proportion reporting that they had not been tested for HIV. Eight out of ten survey respondents with less than a high-school education said that they had not been tested for HIV (79.9%). High-school graduates or those with a GED had the second highest percentage at 75.4%. Among income groups, 9 out 10 respondents with a household income of less than \$15,000 and respondents with a household income between \$15,000 and \$24,999 stated that they had not been not been tested for HIV.

1999 Arizona BRFs Percentage of persons not tested for HIV (N=1277)	
GROUPS	WEIGHTED PERCENTAGE
Total	62.05
Sex	
Male	65.1
Female	58.6
Age	
18-24	73.9
25-35	71.8
40-44	43.3
45-54	64.5
55-64	74.3
65+	N/A
Education	
Less Than High School	79.9
High School Graduate or GED	75.4
Some College or Tech School	58.0
College Grad	52.5
Income	
< \$15,000	93.6
\$15-\$24,999	90.6
\$25-\$49,999	50.9
\$50-\$74,999	50.9
\$75,000	55.4
Unknown/Refused	67.8
Race/Ethnicity	
White, non-Hispanic	61.9
Black, non-Hispanic	29.2
Hispanic	64.1
Other	87.7

Table M-1. 1999 BRFs survey results: Percentage of persons 18 - 64 years of age reporting that they have not been tested for HIV.

Among race and ethnicity groups, persons who had not been tested for HIV were predominately those who marked 'Other' as their race and ethnicity (87.7%) and Hispanics (87.7%). When asked: 'What are your chances of getting infected with HIV, the disease that causes AIDS?', less than one percent (0.8%) said high, while 84.8% reported no chance.

The 1999 BRFs also included questions on preventive education and HIV infection. When asked what grade a child should begin receiving education in school about HIV infection and AIDS, almost a fifth of the respondents (18.9%) said in the fifth grade (Figure M-2), followed by 14% stating in the sixth grade. Respondents were also asked whether they would encourage a sexually active teenager to use a condom. An overwhelming 90.1% reported they would.



References:

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N. FOLIC ACID AWARENESS

FOLIC ACID AWARENESS - Respondents reporting that the reason why some health experts recommend that women take 400 micrograms of B vitamin folic acid is to prevent birth defects.

Figure N-1: Percentage of Women Ages 18 to 44 Who Knew Why Experts Recommended Women Take 400 Mcg of Folic Acid Daily

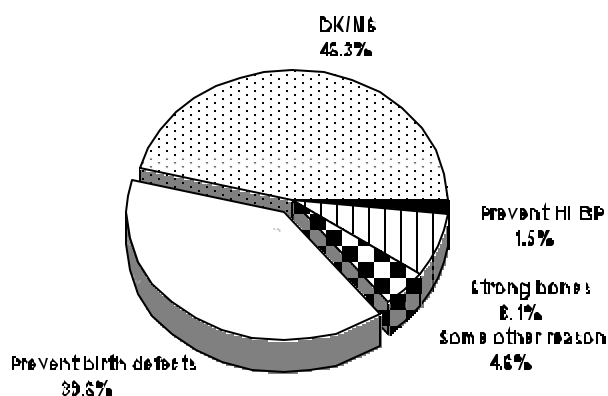


Figure N-1. Responses to the 1999 BRFS question: Reasons some health experts recommend that women take 400 micrograms of folic acid

asked why health experts recommended that all women of childbearing age consume 400 mcg of folic acid daily, about 2 out of 5 female respondents (39.6%) knew folic acid can prevent birth defects (Figure N-1). This was a 10.4% increase from 1998 BRFS data of 29.2%. The 1999 BRFS also surveyed vitamin usage among women age 18 to 44 years old. One out of two women (50.1%) said that they take vitamins. Of those taking vitamins, 89.6% take multivitamins and only 27.5% of these, said that their vitamins contain folic acid (data not shown).

Data in Table N-1 show the percentage of female respondents, age 18 to 44 years, who reported that they did not know that folic acid prevented birth defects. Among age groups, the highest percentage was among the 18 - 24 year olds (65.6%), followed by the 35 - 44 year age group (64.0%). About 7 out of 10 survey respondents with less than a high-school education reported that

Each year in the United States, approximately 4000 pregnancies are affected by neural tube defects (NTDs).¹ Studies have shown that up to 79% of the risk for preventable neural tube defects (NTDs) such as spina bifida and anencephaly may be reduced through adequate intake of folic acid.² Folic acid is a B vitamin that helps form red blood cells and has been found to reduce the risks of certain types of birth defects, cancer, and cardiovascular disease.³ While folic acid is important for everyone's health, it is especially vital for women of childbearing age.

The 1999 Arizona BRFS shows that when

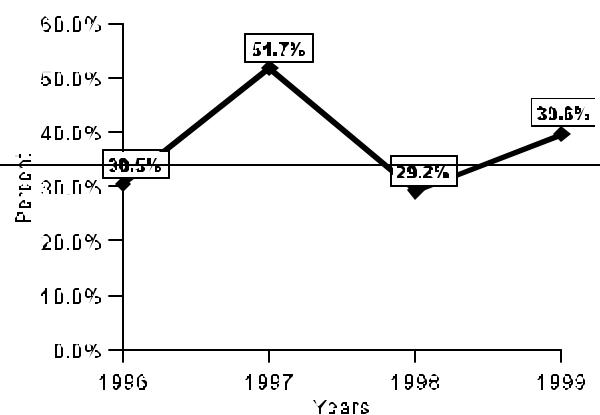


Figure N-2. 1996-1999 percent of BRFS female respondents (18 - 44 years of age) reporting that folic acid prevents birth defects.

they did not know that folic acid prevented birth defects (68.2%).

1999 Arizona BRFs Percentage of female respondents age (18-44) who did not know that folic acid prevented birth defects (N = 430)	
GROUPS	WEIGHTED PERCENTAGE
Sex	
Male	N/A
Female	68.4
Age	
18-24	65.6
25-34	55.0
35-44	64.0
45-54	N/A
55-64	N/A
65+	N/A
Education	
Less Than High School	68.2
High School Graduate or GED	60.5
Some College or Tech School	58.5
College Grad	60.0
Income	
< \$15,000	73.4
\$15-\$24,999	40.3
\$25-\$49,999	50.6
\$50-\$74,999	70.0
\$75,000	38.8
Unknown/Refused	76.3
Race/Ethnicity	
White, non-Hispanic	57.1
Black, non-Hispanic	88.7
Hispanic	63.4
Other	70.3

Table N-1. 1999 BRFs survey results: Percentage of female respondents age (18-44) who did not know that folic acid prevented birth defects.

This is closely followed by respondents who were high-school graduates or had a GED (60.5%) and college graduates, (60.0%) who stated that they did not know that folic acid prevented birth defects. According to household income, the highest percentages were found among those who refused to give information on their household income (76.3%), followed by the less than \$15,000 household income (73.4%) and lastly the \$50,000 to \$74,999 (70.0%). Among race/ethnic groups, respondents who did not know that folic acid prevent birth defects were primarily Black, non-Hispanics (88.7%) and respondents who consider themselves as 'Other' race/ethnicity (70.3%).

The percentages in Figures N-1 and N-2 suggest a continued need to educate Arizona residents about folic acid and the role it plays in the development of healthy babies. This is in line with the recommendation of the United States Public Health Service. This recommendation states that all women of childbearing age in the United States who are capable of becoming pregnant should consume 0.4 mg (400 mcg) of folic acid per day for the purpose of reducing their risk of having a pregnancy affected with a neural tube defect.⁴

References

1. Centers for Disease Control and Prevention. CDC Surveillance Summaries, August 8, 1997. MMWR 1997; 46 (No. 31).
2. Berry RJ, Li Z, Erickson JD, Li S, Moore CA, et al. Prevention of neural tube defects with folic acid in China. NEJM 1999; 34(20); 1485-90.
3. Campbell NR. How safe are folic acid supplements? Archives of Internal Medicine 156(15):1638-44 1996.
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APPENDIX I.

1999 Arizona Demographic Profile	
GROUPS	PERCENTAGE
<u>Sex</u>	
Male	40.9
Female	59.1
<u>Age</u>	
18-24	9.0
25-34	15.1
35-44	17.3
45-54	18.0
55-64	13.4
65-74	13.8
75+	13.0
<u>Education</u>	
Less Than High School	10.2
High School Graduate or GED	36.6
Some College or Tech School	33.0
College Grad	20.0
<u>Income</u>	
< \$15,000	3.8
\$15-\$24,999	19.5
\$25-\$49,999	31.9
\$50-\$74,999	9.8
\$75,000	3.4
Unknown/Refused	31.5
<u>Race/Ethnicity</u>	
White, non-Hispanic	75.3
Black, non-Hispanic	2.5
Hispanic	17.7
Other Race	4.1

Source: Weighted Percentages from the 1999 Arizona BRFS Sample.

